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THE ECONOMIC PATTERN OF WORLD POPULATION

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THE ECONOMIC PATTERN
OF WORLD POPULATION

By J. B. CONDLIFFE

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THE ECONOMIC PATTERN OF WORLD POPULATION

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INTRODUCTION

This study is an attempt to set out the pattern of human resources upon which plans for post-war reorganization must be based. It will involve a summary and analysis of the known facts about world population and its regional distribution. In doing so it will take account not only of present numbers but of the trends of increase that may be measured for the recent past and projected into the immediate future.

Its basic purpose is to analyze the economic significance of world population statistics rather than to present a study of the statistics themselves. For this purpose various zones of population development are distinguished. There is, first, the zone constituted by the new countries of European settlement—the United States, the British Dominions and parts of Latin America—where population increase has been rapid, but may soon slacken. In this zone productivity is high because of abundant resources and capital equipment, efficient labor and modern methods of organization. Living standards are high and urbanization is well advanced. Then, too, the merging of town and country in these new civilizations has offered great opportunities for individual prosperity and cultural development.

The industrial zone of western and northern Europe, from which the New World was colonized, is more densely populated and less productive. It was in this zone, and particularly in Great Britain, that the application of scientific discoveries to economic production began and from it they spread over the modern world. The great increase of population living at higher levels of consumption which was characteristic of the 19th century had its origin in this Industrial Revolution. The impulses which led to this swarming of the European peoples are dying down in western Europe; but they continue to cause trends of population increase elsewhere.

In eastern Europe and in agricultural Asia cycles of population

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increase have been started which are now difficult to arrest. In these zones, however, resources are more limited, capital equipment is scanty and economic organization is primitive. Standards of living are therefore low.

Japan, and more recently the U. S. S. R., have entered the industrial stage of civilization by their own characteristic devices and cannot be fitted easily into the general pattern. They have presented, each in its own way, methods of industrialization alternative to the capitalist enterprise and trade by which western European technique has spread to industrially backward areas. The primitive peoples of isolated areas offer another special case. At first devastated by the impact of industrialism, they have in many areas made a painful adaptation to the new order and are now facing the prospect of heavy population pressures on limited resources.

The present distribution of the world's population, and present trends of increase, it is clear, are largely the result of the industrial development that began about a century and a half ago in western Europe. The network of international trade and investment that grew out of that development stimulated specialized production and offered opportunities of livelihood that are now gravely prejudiced by the possibility that such trade cannot be restored. Unless cooperative economic relations can be resumed and strengthened among the peoples of the world, all countries will be faced with problems of over-population. The levels of living reached in the zone of highest economic development—and not less the opportunities of individual achievement there open to the ordinary man—are imperilled by this prospect. The progress of other peoples towards these levels is equally endangered unless ways and means can be found by which peaceful trade and economic development can be resumed on a world scale.

THE WORLD TOTAL

The most authoritative recent estimates of world population show a reasonable convergence somewhat above the figure of 2,000 millions. The convergence, however, might be described as spurious since in fact all the authorities tend to accept the same estimates for areas in which the population must be guessed within rather wide margins of possible error.¹ The fact of the matter is that we

¹ Cf. A. M. Carr-Saunders, *World Population: Past Growth and Present Trends* (Oxford, 1936), pp. 17-18. The same estimates may be obtained from a
(Continued on page 3)

do not know even the total number of the population within a margin of 10 percent for areas that may contain from a fourth to a third of the people at present living in the world.²

We may, however, accept tentatively the round figure of 2,000 millions plus as the best approximation to the present total of world population and proceed to inquire as to its distribution over the earth's surface. A multitude of problems at once confronts us. It is not very illuminating to give global figures of distribution by continents nor by countries.³

(Continued from page 2)

variety of sources with critical comment of the same general character. Cf., e. g., *Encyclopedia of the Social Sciences*, Vol. XII, article "Population" by R. R. Kuczynski; and Erich W. Zimmermann, *World Resources and Industries* (New York, 1933), Chapter IX.

² Cf. Kuczynski, *op. cit.*, p. 240. "If by knowing the population of a country is meant that the reported population can safely be said neither to exceed nor to lag behind the actual number of inhabitants by more than 10%, it might be said that the present population is known for all countries of Europe, North America and Oceania and for some countries of Asia and Africa. The countries for which, by this standard, the population is not known comprise at present probably one-third or one-fourth of the world's population. In 1900 the *terra incognita* was not much larger, but it comprised at least 80% a century ago."

The most authoritative challenge to the figure of 2,000 millions is in Walter F. Willcox, "Population of the Earth," *International Migrations*, Vol. II, Part I (New York, 1929). The main reason for Willcox's lower estimate is the lower figure he gives for China. For a careful and thorough criticism of the statistical bases of Willcox's estimate, see Nanming Liu, *Contribution à l'étude de la population chinoise*, Publications de la bibliothèque sino-internationale, Genève, No. 3 (Geneva, 1935), pp. 99-102. Cf. also, inter alia, A. M. Carr-Saunders, *op. cit.*, Chapter III and the evidence reviewed by J. B. Condliffe, *China Today: Economic* (Boston, 1932), Chapter I.

In a later study, Professor Willcox raises his estimates for China from 342 to 381 millions. See "Studies in American Demography", Cornell University Press, 1940, App. 2, pp. 511-540.

³ Cf., e. g., the following table cited by Carr-Saunders, *op. cit.*, p. 17, from official estimates.

Estimates of the Population of the World in 1930
(000,000's)

<i>Continents</i>	<i>International Institute of Statistics</i>	<i>International Institute of Agriculture</i>	<i>League of Nations</i>
Europe.....	484.6	505.7	504.6
America	248.8	251.5	249.8
Africa	143.3	142.4	145.4
Asia	1,101.7	1,103.3	1,118.6
Oceania	9.9	9.9	9.8
World Total.....	1,988.3	2,012.8	2,028.2

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The essential problem, in Professor Zimmermann’s phrase, is to estimate the “man-land ratio” for the main economic regions of the world.

CULTIVATED AREAS

It is useful first of all to compare population and actually cultivated areas. The possibility of doing so is greatly enhanced by the map reproduced herewith. This map is the result of laborious and painstaking researches, lasting over many years, by Dr. Merrill K. Bennett of the Food Research Institute of Stanford University. It shows how very small a portion of the earth’s surface is at present used by mankind for the production of food.

Geographers and economists have continuously stressed this fact and deprecated the uncritical use of crude measures comparing the density of population in political areas. It is easy to take the population of each national unit and divide it by the number of square miles or kilometers of national territory. Figures of population density obtained in this way, however, are hardly worth serious discussion. They take no account of soil, rainfall, altitude, slope or temperature, of the quality of the inhabitants, their standards of living, economic organization, markets or capital equipment.

It has been estimated that the area of land actually cultivated at present is approximately 3.7 million square miles or slightly more than 7 percent of the total land surface of the globe. Of this cultivated area almost exactly two-thirds lies in the temperate zone and the remaining one-third in the tropical zone. On the basis of topographical, climatic and soil conditions the same authority has estimated that possibly another 4.2 million square miles, or slightly more than 8 percent, is potentially cultivable; but of this area rather more than three-fourths lies in the tropical and only one-fourth in the temperate zone.⁴ To these areas where dense agricul-

⁴ Cf. O. E. Baker, *Geographic Review*, Vol. 13 (1923), p. 25.

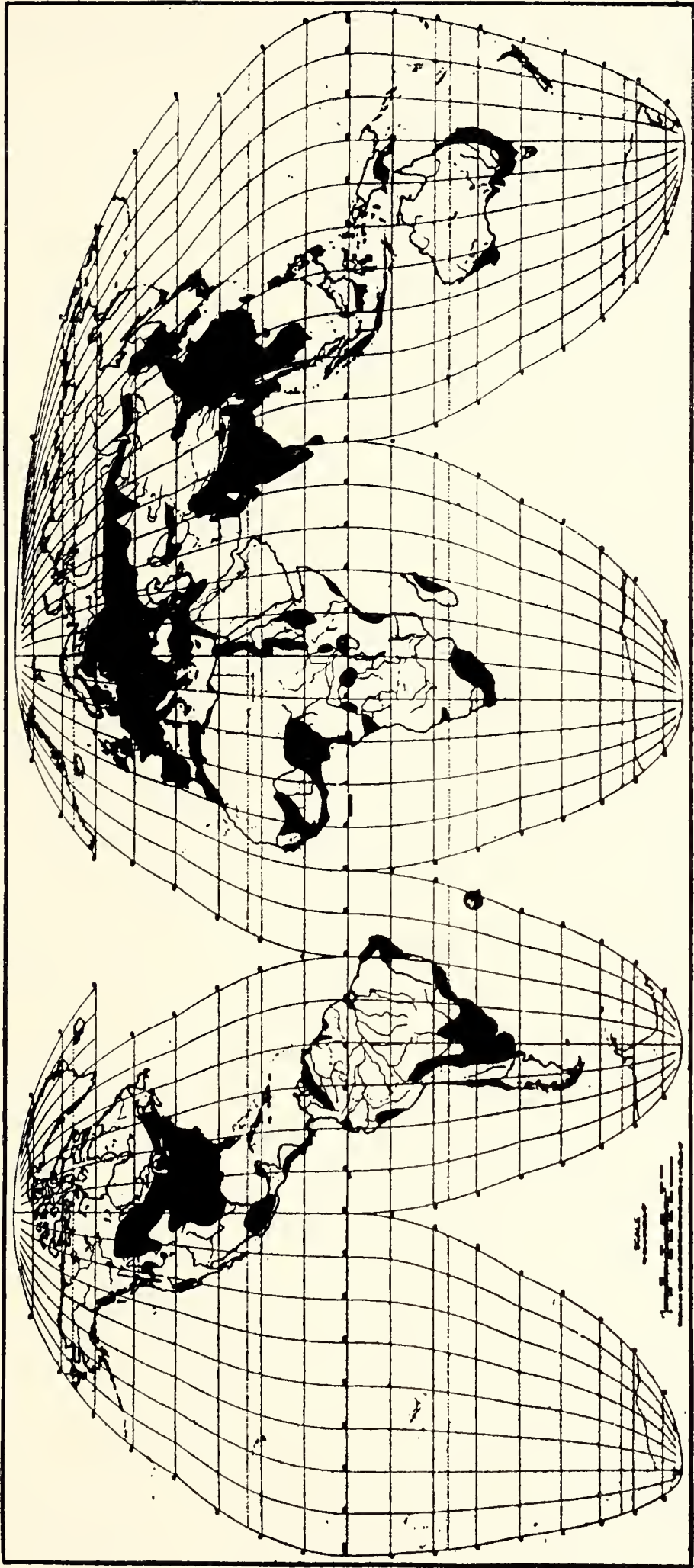
Arable Lands of the Earth
Square miles (000,000’s)

<i>Lands</i>	<i>Tropical and sub-Tropical Temperate</i>		<i>Total</i>
Too Arid for Crops	8.0	7.6	15.6
Too Cold for Crops.....		6.4	6.4
Not Arable	10.0	10.0	20.0
Pasture; but Arable	.6	1.5	2.1

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WORLD AREAS OF ARABLE AGRICULTURE

By Dr. Merrill K. Bennett, Food Research Institute of Stanford University



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tural populations are at least possible, may perhaps be added a further 2.1 million square miles (4 percent of the total land area), of which nearly three-fourths lies in the temperate zone, which is at present devoted to pasture but may be regarded as potentially arable. If all these areas are added, rather less than 20 percent of the earth's surface is suitable for crop cultivation, and of this area approximately half lies in the tropical zone. It is on this 20 percent of the earth's surface, as will be seen in the population map that parallels the map of cultivated areas, that the great bulk of the world's population is at present concentrated.

POPULATION DISTRIBUTION

The first outstanding fact that leaps to the eye is that the regions of densest population are all in the northern hemisphere. There is, in fact, much less land than water in the southern hemisphere and the greater part of what land there is is not suitable for intensive settlement.

In the northern hemisphere there are three main centers of population density, the highly developed industrial region of western Europe, a similar area in the eastern United States and the intensively cultivated regions of eastern and southern Asia. Closer analysis, by economic regions rather than by national boundaries, discloses the fact that the concentration of population in western Europe and eastern United States occurs in areas convenient to great resources of minerals and power adequate to sustain a highly developed industrial civilization. In eastern and southern Asia, on the other hand, the greatest concentration occurs in the river valleys and other fertile areas of the monsoon belt.

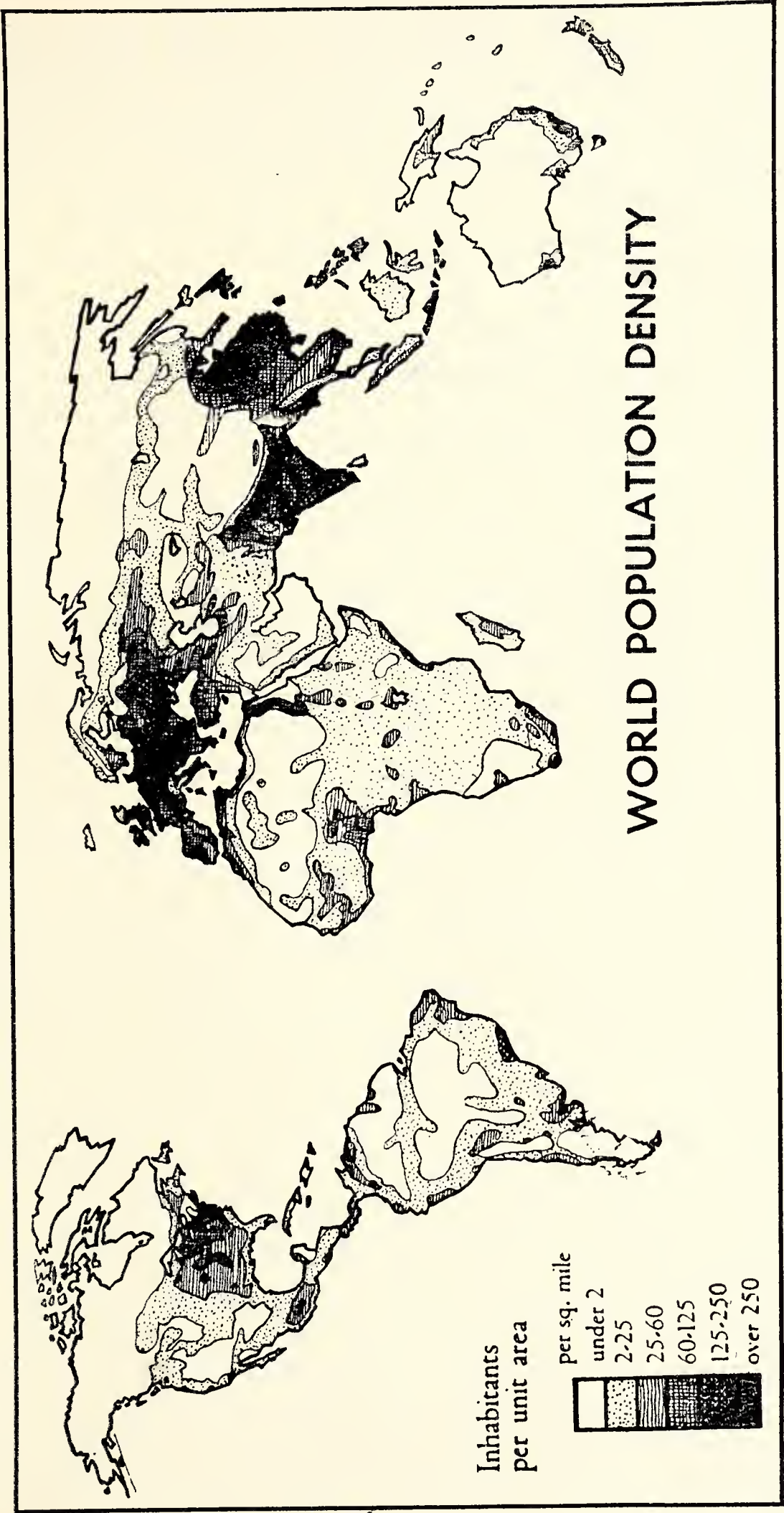
The contrast between these two types of population pressure is one of the basic problems of world population. That contrast is striking from many points of view. In Europe and the United States the heaviest population density is in industrial areas, in Asia it is dominantly agricultural. The former is essentially urban in its development, the latter rural. Western Europe and America have high living standards, in eastern and southern Asia living standards are pitifully low. Most significant of all, the western industrial communities have now succeeded in reducing both their birth and their

(Continued from page 4)

Cultivated	1.2	2.5	3.7
Potential Arable	3.2	1.0	4.2
Total land area.....	23.0	29.0	52.0

WORLD POPULATION DENSITY

Adapted from Goode's School Atlas plate 8/9 Rand McNally, Chicago



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death rates, so that numbers are consciously limited, primarily by control of births. In Asia, on the contrary, already dense populations press constantly upon the limits of subsistence and are kept in check only by the harsh natural controls of famine, war, pestilence and natural calamities.

ZONES OF DENSITY

LOW—Before analyzing this contrast further, however, something should be said of the distribution of population outside these major areas of concentration. A large, if scattered, population is devoted to food production outside the agricultural zones of greatest density. There are wide regions devoted mainly to grazing or other forms of extensive and specialized farming. These regions are lightly populated, their density ranging from one to fifteen inhabitants per square mile. Among them are some of the colonies of recent European settlement which enjoy the highest living standards in the world. The western slopes of the North American continent, the Canadian prairies and the uplands of the middle-west of the United States, the inland grazing areas of South America, the drier regions of central and east Africa, coastal Arabia, the greater part of southern Siberia, parts of the Malayan archipelago, the coastal rim of eastern and southeastern Australia and most of New Zealand, lie within this zone of population density.

Much of these regions is thinly settled because of sparse or uncertain rainfall which calls for highly specialized forms of pastoral or agricultural production. But it would seem clear that more intensive settlement is possible, and even desirable, over a large part of these thinly peopled lands. Some of them, notably those in the Americas and the British Dominions, have not long been opened by modern transport to modern forms of cultivation. Within the past century they have come into the effective possession of European settlers who have developed efficient, large-scale extensive farming methods, using power and machinery involving great capital expenditures. For some decades, particularly after 1870, when rapid mechanical progress in railways, shipping, and refrigeration coincided with improved marketing organization made possible by virtually world-wide currency stability and large foreign investments, these countries developed rapidly. Their natural increase of population was rapid because birth rates were still high while death rates were low and the high rate of increase was reinforced by

considerable immigration mainly of young adults who not only added themselves directly to the population, but, being in the reproductive age-groups, swelled the birth rate.

More recently the tendency of these populations to increase has suffered a check. Immigration has virtually ceased. Even more than in western Europe the age at marriage is relatively high and the birth rate has rapidly declined. Standards of living are very high in these lands and almost without exception their peoples have raised legislative barriers against immigrants from areas with lower standards of living. This is the most direct and obvious reason why they remain relatively under-populated as compared with the teeming regions of Asia or even with the agricultural regions of central and eastern Europe.

There are, however, other reasons for their low density of population. The tremendous productivity which enriched them and made possible their very high living standards was at least partly the result of exploiting the virgin fertility of new soils. Perhaps the clearest examples of this fact may be found in such areas as the North Island of New Zealand, where great forests were wantonly felled and burned to provide grazing lands that temporarily were fertilized with rich potash; but the phenomenon is general. Wherever an attempt has been made to push the boundaries of cultivation beyond natural limits of rainfall, nature has begun to take a drastic revenge. Not only in the dust-bowl of the United States, where the grass-cover evolved by centuries of slow plant ecology was ruthlessly torn off, and in other regions where forest destruction has laid the soil open to erosion and floods; but wherever there has been predatory farming in the form of over-cropping or over-grazing the soil has deteriorated or been washed or blown away.⁵ While, therefore, there is still room for population increase in these thinly-settled areas, the limits of increase are probably much narrower than might be assumed from comparisons with more closely-settled regions elsewhere. Natural pests, some of them introduced, like the rabbit in Australia and New Zealand, others native to the soil, like the human and animal diseases that are endemic over large parts of Africa, operate almost as effectively as lack of rainfall to limit human settlement.

It is probable, however, that such emigration outlets for popula-

⁵ Cf. C. V. Jacks and R. O. Whyte, *The Rape of the Earth*; American title, *Vanishing Lands* (New York, 1939).

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tion pressure as may be utilized in the future will be found in these areas of extensive agriculture. Most of them are in the temperate zones and practically all of them are in the occupation or under the control of the dominant European peoples, mainly it should be said Anglo-Saxon. The swarming of these peoples into the last frontier lands of the world—the unoccupied or thinly-populated grasslands of the Americas, Australia and New Zealand—and the partitioning of Africa—was an episode in the great cycle of population increase that accompanied the rise of Western industrialism in the 19th century. It was a staking out of claims rather than a fully effective occupation of the new territory. As will become clear in the subsequent discussion, the swarming impulse is now dying down in western Europe, leaving the outposts of its civilization lightly held and in glaring contrast with the overflowing populations of other areas.

The exposed position of these new lands with their scanty populations, high productivity and unused resources is all the more evident when one considers the increasing scale of population pressure in the older civilizations. As soon as the frontier regions of fairly recent settlement are left behind there is a steady progression of two sorts of population pressure—agricultural and urban.

MODERATE—No clear line can be drawn between the various zones. The frontier lands shade into the somewhat older and more closely-settled colonies of European settlement in eastern Canada, the middle-western and southern United States and certain coastal regions in South America. Already population in these areas has thickened sufficiently to have the same range of density (15 to 75 inhabitants per square mile) as very much older but poorer and less well organized agricultural regions such as west-central Africa, and certain coastal strips in the southwest and northwest of that continent, a great deal of Soviet Russia, the mountainous regions of China and the wetter and therefore more closely-settled parts of the tropical East.

Even in this zone of density one becomes aware of the contrast between the western European type of capitalist, mechanized farming supported by and leading naturally to urban aggregation and the Asiatic peasant type of farming, which is decentralized, more dependent upon human labor, less equipped with power and yielding much lower standards of living. This distinction must obviously be borne in mind when grouping in one zone of density the highly-developed farming regions of the middle-western American states

and the poor uplands of China. The distinction is vital, perhaps the most vital of the whole problem of world population. It is a contrast between areas in which unrestrained pressure of numbers upon limited resources is kept in check only by the harsh forces of nature and those in which human control over natural conditions (especially over sources of physical energy) and not less over social organization, has enabled numbers to expand while raising living standards. On the one hand we find low levels of human livelihood, scientific ignorance, social anarchy, and natural controls over population increase—on the other, high levels of achievement, increasing scientific knowledge and conscious human control of numbers by limitation of births.

HEAVY—This contrast between the stable but harsh conditions involved in submission to natural forces and the comfortable but somewhat artificial and precarious social conditions of a scientific civilization becomes sharper as we go up the scale of density. In the next zone (from 75-150 inhabitants per square mile) we find the mineral belt of the United States where manufacturing industry is growing rapidly but population pressure is not yet as great as in western Europe, or in the richer soils of central Europe and Soviet Russia. In this zone also lie the fringes of the dense agricultural populations of India, Indo-China and China. So it goes till the highest densities are reached. Here is a zone (from 150-300 inhabitants per square mile) which includes not only the more industrialized eastern part of the United States and most of industrial western Europe, but also a great part of middle China.

HIGH—Finally there emerges starkly the greatest contrast. On one hand the urbanized industrial areas of western European civilization—New York, London, industrial Germany, Belgium and part of the Netherlands—and on the other the massed humanity of the river valleys of India and China. There are, of course, many modifications of this sharp statement to be made in detail. Some small islands in the West Indies and the Pacific have very high population densities. It is not easy to draw clear lines between the peasant masses of Asia, the U. S. S. R., eastern and central Europe and finally the richer peasantry of western Europe. Japan symbolically is placed in both these worlds. In its broad outlines, this, the most dramatic contrast of our economic world, embodies the ultimate meaning of much of our recent history and present problems. In it there are dangerous elements of conflict, not between east and west, but between different ways of life. The hegemony of Europe in world

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affairs is a very recent phenomenon. It is the product of that burst of scientific discovery and mechanical invention which in the 19th century lifted western Europe for a time beyond the control of crude natural forces, enabling its people to multiply, spread and take control over virtually all the unused resources of the world. At the same time it enabled them to raise their living standards and maintain artificial ways of life—great cities without adjacent food supplies and highly specialized workers depend upon elaborate cooperation for assuring the means of their existence. Ultimately it enabled them also to control their own increase.

STAGES OF DEVELOPMENT

If an attempt be made to classify these economic regions, however roughly, into groups at different stages of economic organization and development, it is obvious that the United States, together with the British Dominions and some of the more developed areas of Latin-America, fall into a group characterized by a high degree of urbanization, credit organization and capital equipment, great productivity and high living standards. In this area population is relatively not very dense and its increase is slowing up.

Next in order of productivity, equipment and living standards comes the highly industrialized area of northern and western Europe. Here, too, the increase of population is slackening; but present densities are much heavier than in the New World.

The distinction between the new countries of abundant equipment and high living standards and the agricultural peasant countries of Europe east of Switzerland is very clear. There is a most striking contrast in the methods of agricultural production, in transport facilities, in credit organization, in the degree of urban development, and above all in living standards.

In Asia, except for Japan, which preceded the U. S. S. R. in its striving for modernization, the contrast is even more complete. The gap between the incessant labor, poor equipment, and low living standards of the Chinese or Indian peasants and the mechanical power, high productivity and living standards of the American or Australian worker is such that they might almost be described as living in different economic worlds.

Where equipment is abundant and living standards are high, population increase is slowing up. Where population is still increasing fast and still more where new cycles of increase have just

begun, equipment is scarce and living standards are low. Moreover, population tends at present to increase most rapidly where natural resources are least abundant. The only possibility of forestalling population pressure and perhaps political conflict, as the contrasts between numbers and resources become even more evident in the near future, would seem to lie in the reconstruction of international investment and trade so that equipment may be provided for the growing populations to make the fullest possible use of their resources.

But before we consider in detail the more recent trends of increase in Asiatic lands, let us consider the story of European development, with its amazing shifts in population density, and the phenomenal growth and recent stabilization of its millions of people.

THE EXPANSION OF WESTERN EUROPE

The figure of 2,000 millions as the total of present world population must be accepted as a rough approximation at best. Population estimates for earlier dates are subject to still wider margins of error. It is not possible, therefore, to get any very precise information concerning the growth of world population. Even for the last two centuries, we do not know, except in very broad outline, the rates of increase for important areas or for the world as a whole.

Nevertheless, sufficient information is available to indicate the direction of the major movements and therefore the shifts in the relative density of important areas. The statement which follows is based upon the estimates of Professor Walter F. Willcox as revised by Professor A. M. Carr-Saunders.⁶ The table below summarizes these estimates, the last column of the table being added from the latest figures in the Statistical Year Book of the League of Nations (1937-8).

ESTIMATED POPULATION OF THE WORLD, 1650-1938

(000,000's)

<i>Continent</i>	1650	1750	1800	1850	1900	1936	1938
Europe	100	140	187	266	401	533.0	400.1 (ex. USSR.)
North America	1	1.3	5.7	26	81	140.3	141.9
Central and							
South America ..	12	11.1	18.9	33	63	127.5	132.1
Oceania	2	2	2	2	6	10.5	10.7

⁶ A. M. Carr-Saunders, *op. cit.*, p. 42.

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<i>Continent</i>	1650	1750	1800	1850	1900	1936	1938
Africa	100	95	90	95	120	151.2	155.5
Asia	330	479	602	749	937	1,153.3	1,134.5 (ex. USSR.) 170.4 (USSR.)
World Total	545	728	906	1,171	1,608	2,115.8	2,145.2

If our starting point be taken as the middle of the 18th century, before the Industrial Revolution had got well under way in western Europe, it will be seen that the world's population has trebled in just under two centuries. The growth in the previous century was much more moderate and was mainly the result of increases in Asia.

This threefold increase in world population since 1750 was, almost certainly, at a more rapid rate than in any previous period. Moreover, the rate of increase was cumulative. In each half-century the percentage of growth was greater than in the preceding half-century. This is true even for the latest period.⁷

The dominant factor in population increase during the 19th century was the expansion of western Europe. It began to develop after the agricultural civilizations of India, China and Japan had reached their peak. In the 17th and 18th centuries the population of Asia increased so much faster than that of the rest of the world (Europe included) that by 1800 it accounted for two-thirds of the world total. The bulk of this increase, however, came in the 17th and early 18th centuries when these Asiatic countries were at least abreast, and in many respects ahead, of European economic and cultural development. The replies made by Chinese Emperors to successive envoys from western countries, indicating that China had no need to learn from them or to trade with them, may sound strange to modern ears; but they were literal truths at that time. In the age of agricultural organization, before the advent of industrialism, China had little to learn from the West. Indeed, the contrary is true. The West borrowed much, including economic doctrines, from China.

It is perhaps salutary to look first at the 19th century increase in the population of western Europe through the eyes of a Chinese.

⁷ These increases may be summarized as follows:

INCREASES IN WORLD POPULATION

1750—1800	24%
1800—1850	29
1850—1900	38
1900—1938	33 (equivalent for 50 years to 46%)

In the first of his famous lectures on "The Three Principles of the People," which have become the political bible of modern China, Dr. Sun Yat-sen laid stress on the peril—"the white peril"—which western European and American economic expansion constituted for other peoples, and particularly for China. Very similar statements may be culled from the writings of Indian and Japanese students of population.⁸

The growth of population in western Europe and its expansion overseas in the course of the last two centuries is, indeed, a remarkable phenomenon. It is all the more remarkable since the expansion was cumulative. Both the increase in Europe and the expansion overseas reached their peak towards the end of the 19th century. Since that time a swift change has taken place until it now seems almost certain that the expansion is coming rapidly to an end. Before dealing with these latest developments, however, it is well to outline the main facts of the swarming of western European peoples in the 19th century.

These facts are fairly well documented since the accuracy of population estimates is naturally greatest in the scientific civilizations of the West. They are summarized briefly in the table which follows. The merest glance at this table is sufficient to reveal the magnitude of the increase of numbers in western Europe and the still greater magnitude of that increase in the new countries of European settlement.

GREAT BRITAIN

It is significant that the country which not only increased much faster than any other in Europe, but also supplied the greatest number of emigrants to the new countries was Great Britain.⁹ The 19th century was Britain's century. The impulses which created our modern world were centered in Britain. Towards the end of the 19th century these impulses had spread to other countries in western Europe, notably to Germany, where the development of machine

⁸ Cf. Mukerjee, Radhakamal, *Migrant Asia* (Rome, 1936), p. 180; Nasu, Shiroshi, "Population and the Food Supply" in *Population*, Lectures on the Harris Foundation, 1929 (The University of Chicago Press, Chicago, 1930), pp. 201-2.

⁹ Cf. The estimates of inter-continental migration in A. M. Carr-Saunders, *op. cit.*, p. 49. The figures there given for the British Isles include the heavy emigration from Ireland, but even without Ireland emigration from Britain was heavier and earlier than from Italy and still heavier than from Austria-Hungary,

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industry began to outstrip that of Britain, and to southern and eastern Europe, which began to supply the greater number of emigrants to other continents. Up till 1875, however, Britain's leadership, both in the application of new machine methods to industry and in the organization of a vast system of world-wide trade, was

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Germany or Spain, all of which had much larger populations than Britain in 1800.

THE INCREASE OF POPULATION IN WESTERN EUROPE AND EUROPEAN SETTLEMENTS OVERSEAS 1800-1938

Country	(000,000's)			
	1800 ^a	1850 ^b	1900 ^a	1938 ^c
Belgium	3.0	4.4	6.7	8.4
Denmark	1.0	1.4 ¹	2.5	3.8
Finland	1.1	1.6	2.6	3.7
France	28.2	35.8	40.7	42.0
Germany	23.0	35.1 ⁴	56.4	69.5
Great Britain	10.7	(1851) 20.9	37.0	46.3
Ireland	5.3	(1851) 6.6	4.5	4.2
Italy	18.1		32.5	43.4
Netherlands	2.2	(1851) 3.1	5.2	8.7
Norway	.9	(1855) 1.3	2.2	2.9
Portugal	3.1	3.5 ²	5.4	7.5
Spain	12.0	(1849) 14.2 ³	18.6	25.6
Sweden	2.3	3.5	5.1	6.3
Switzerland	1.8	2.4	3.3	4.2
Argentina		1.1 ⁴ (1895)	4.0 ⁶	13.0
Australia		(1870) 1.6 ⁵	3.7 ⁶	6.9
Brazil		7.7 ⁴	16.6 ⁶	44.1
Canada	.35 ⁴	2.4 ⁷ (1901)	5.4	11.3
Chile		1.3 ⁴ (1895)	2.7 ⁶	4.6
New Zealand		(ex Maoris) .8		1.6
Union of S. Africa.....		(1904) 5.2		10.1
U. S. A.....	5.3	23.2	76.1 (1940)	130.3
Uruguay				

¹ Not including Schleswig-Holstein. Lauenburg 888,750.

² Not including Madeira and Azores 343,000.

³ Including Balearic and Canary Islands.

⁴ Willcox, W. F., *International Migrations*, p. 77.

⁵ Shann, E. O. G., *Economic History of Australia*.

⁶ Census figures.

⁷ British America.

Principal Sources:

^a *Encyclopedia of the Social Sciences*, Vol. XII, p. 244.

^b Guillaumin, etc., *Annuaire de l'économie politique et de la statistique*, Paris.

^c League of Nations *Statistical Yearbook* 1939/40.

the outstanding feature of the rapid economic changes that were none the less revolutionary because they were for the most part peaceful.

In the course of this trading development Britain built up new colonies of settlement and greatly extended the boundaries of its dependent empire. This whole imperialist development was the inevitable consequence of industrial development and population increase. It has recently been described by Professor W. K. Hancock as a spilling over of British enterprise into an indeterminate frontier zone of economically undeveloped areas.¹⁰ The frontiers of missionary effort, of investment, of trading enterprise, of permanent settlement and of territorial sovereignty seldom coincided; but where disorder or conflict resulted from economic penetration, annexation often followed.

INDUSTRIAL PROGRESS AND POPULATION INCREASE

The causes of this great trading expansion, in which Britain led the way, but was followed quickly by other western European powers, were also the causes of the unprecedented increase in the population. It is perhaps futile to discuss the question as to whether industrial progress caused the increase of population or vice versa. It is obvious that both went hand in hand, increased production widening the possibilities of subsistence and larger numbers expanding markets. Behind both lay deeper causes which were responsible first in Britain and then in other countries, for increased vitality and enterprise. Among these causes were the long period of domestic peace and orderly government that Britain enjoyed after 1688. During this period a great revolution took place in agricultural methods. Food supplies increased and labor was set free for industrial specialization.¹¹ The agricultural revolution, however, was at

¹⁰ W. K. Hancock, *Survey of British Commonwealth Affairs*, Vol. II, *Problems of Economic Policy 1918-1939*, Part I (London, New York, Toronto, 1940), especially Ch. I, Section I.

¹¹ Cf. D. V. Glass, *The Town* (London, 1935), p. 3. "In a closed community which has no trade relations with other communities, if four agricultural labourers can only raise enough produce to support five people then not more than one-fifth of the population can live in towns and work at non-agricultural pursuits. Every increase in agricultural productivity helps to increase the possibility of urbanism, while at the same time the breakdown of barriers against trade, whether these barriers are natural or artificial, helps in the same direction."

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least partly dependent upon the application of new capital to the land, and this capital came in large part from the profits of trading enterprise, including the plunder which Elizabethan seamen hijacked from Spaniards who had robbed the treasures and exploited the mines of America and that which came directly from similar British appropriation of Indian hoards. Capital accumulation, new agricultural methods, scientific discoveries and industrial invention increased the economic strength of Britain and enabled her to win the long struggle with France and her allies at the opening of the 19th century. Command of the seas after Trafalgar enabled her trading ventures to be expanded on a world-wide scale.

IMPROVED LIVING STANDARDS—LOWER MORTALITY

As economic opportunity widened, numbers increased primarily because the prospects of survival were improved.¹² Better nutrition improved resistance to disease, better housing and clothing aided in this process and also in the control of epidemic disease which is primarily due to purer water supplies as well as to more effective drainage and sanitation both in town and country. As increasing productivity raises living standards and provides a surplus of wealth that can be devoted to public uses, not only popular education but better medical training, hospital systems and public health controls contribute also to the fall in the death rate.

In England, to take a specific example, there appears to have been a decline in infant mortality from about 1780, followed by a leveling out of the rate about 1800.¹³ This decline appears to have been due primarily to general causes such as improved nutrition and better infant care. It may have been a result of the increased food production and agricultural prosperity of this period preceding the Napoleonic Wars.

In 1798 a new and potent factor was introduced when Jenner's method of vaccination against smallpox "led to an almost immediate

¹² It is possible that improved opportunities of marriage at somewhat earlier ages may have led to temporary increases in the birthrates. Cf. T. H. Marshall, "The Population Problem during the Industrial Revolution," *Economic Journal* (Economic History Series No. 4), January, 1929; also John Brownlee, "The History of the Birth and Death Rates in England and Wales taken as a whole, from 1570 to the present time," *Public Health*, Vol. XXIX, June and July, 1916.

¹³ T. H. Marshall, *op. cit.*

lowering of the death-rate among children.”¹⁴ The fight against epidemic disease which particularly affected young children above the age of infancy was progressively effective during the 19th century and accounts for a large, perhaps the largest, part of the fall in the death-rate up to 1900.

A contrary influence must be noted, however, at a very early stage. The death-rate had fallen from 28.6 per 1,000 in 1781-90 to 21.1 in 1811-20, apparently as a result of the drop in infant mortality supplemented by the first effects of the fight against epidemic disease. But the rate of infant mortality had become stabilized about 1800, and in the meantime urban overcrowding and harsh factory conditions in the first stages of the Industrial Revolution, had gone some distance towards offsetting the controls of epidemic diseases. It may be, too, that the infants who survived in greater numbers in the period 1780-1800 included a greater proportion of physically less resistant individuals. Whatever the exact combination of causes, there was a slight but definite rise in the death-rate to 23.4 in the decade 1831-40.¹⁵ The general tendency, however, was downward and by 1851-60 the rate had fallen again to 21.2.¹⁶

The downward tendency continued throughout the latter half of the 19th century. The main factor in the decline apparently was a sharp decrease in the death-rate among young children.¹⁷ Since the death-rate of young children, even more than of infants, is closely associated with the incidence of epidemic disease, it seems probable that the major cause of the declining death-rate in this period was civic improvement in urban areas combined with improved medical practice in the field of public health.¹⁸

In the 20th century there came a rapid fall in the rate of infant mortality which had remained almost stationary for decades. The rate had been between 150 and 160 per 1,000 from 1841 to 1875 and after falling somewhat was again 156 in 1896-1900. Thereafter

¹⁴ Brownlee, *op. cit.*, p. 212.

¹⁵ T. H. Marshall, *op. cit.*

¹⁶ The Registrar-General's Statistical Review of England and Wales.

¹⁷ Miss B. L. Hutchins, "Note on the Mortality of Young Children," in *Journal of Royal Statistical Society*, Vol. 71, pp. 174 ff.

¹⁸ Miss Hutchins discovered that Liverpool, a typical industrial town, lost twice as many infants under one year as Uppingham or Hambleton which were regarded as healthy country districts; but it lost well over four times as many children between one and two years old and from three to four times as many between the ages of two and five.

the fall was rapid and continuous till it reached 52 in 1938—a fall of 66 per cent in about forty years. The general death-rate, which had been 18.2 in 1900 had fallen to 12.2 in 1939, largely in consequence of this sharp fall in infant mortality.

This tremendous fall in the average death-rate from 28.6 to 12.2 per 1,000 in a century and a half was the major cause of the great increase in the British population. The average expectation of life rose greatly in this period. It was 39.91 years in the period 1838-54.¹⁹ By 1937 it had risen to 60.18 years for males and 64.40 years for females.²⁰ Fewer people died at an early age and the great number of survivors lived longer on the average.

If this analysis is broadly correct, it is profoundly significant. Other countries have followed in the path that England pioneered. In all of them the same broad sequence of population increase is evident. There seems no valid reason why improved housing and nutrition, better drainage, pure water supplies, as well as improved medical practice, should not continue to bring in one country after another a substantial decline in epidemic and other death-rates. Not only in western but in eastern Europe and even in Asia these tendencies are evident. The multiplication of numbers that was characteristic of western Europe in the 19th century is being repeated on a wider stage in the 20th.

The immediate effect of a fall in the death-rate while the birth-rate remains at a high level or even seems to increase slightly is obviously to increase the numbers of the population and most of this increase is concentrated in the younger age-groups. A growing population, therefore, has a large proportion of children and young people. In the course of time, as these young people mature, the number of prospective parents in the reproductive age-groups is increased and therefore the absolute number of births increases. As long as there is no decline in the birth-rate the increase of population, once begun, is cumulative.

IMPROVED LIVING STANDARDS—LOWER BIRTH RATE

With rising standards of living, however, there is a strong tendency for the birth-rate to fall. Apart from the adoption of birth-control methods by widening circles of the population there is a postponement of marriage and greater numbers of women prefer

¹⁹ Carr-Saunders, *op. cit.*, p. 74.

²⁰ *League of Nations Statistical Yearbook 1939-40.*

economic independence to marriage. In order to get more accurate measurements, population statisticians have devised methods of calculating the number of female births per 1,000 of the women whose ages fall within the reproductive age-groups. These measurements are known as gross reproduction rates when no allowance is made for the probability that a certain number of the girl babies will die before themselves reaching the reproductive ages. When such allowance is made, they are known as net reproduction rates.

If the net reproduction rate is above unity, it indicates that there will be a greater number of potential mothers in the next generation; if it is below unity there will be fewer. Both gross and net reproduction rates have been falling steadily and rapidly in all the western European countries and their offshoots overseas since about 1875. The fall has been particularly steep since about 1910. In many of these countries the net rate has fallen below unity, so that, unless a rise occurs in the rate, there is a strong probability that the total population of these countries will shortly begin to decline. The rate of absolute increase in their numbers has already slackened considerably and the slackening is cumulative. The map of Europe showing the areas in which the net reproduction rate is now above and below unity indicates clearly that the cycle of population increase which began about two centuries ago in what are now the industrial countries of western Europe is almost exhausted.

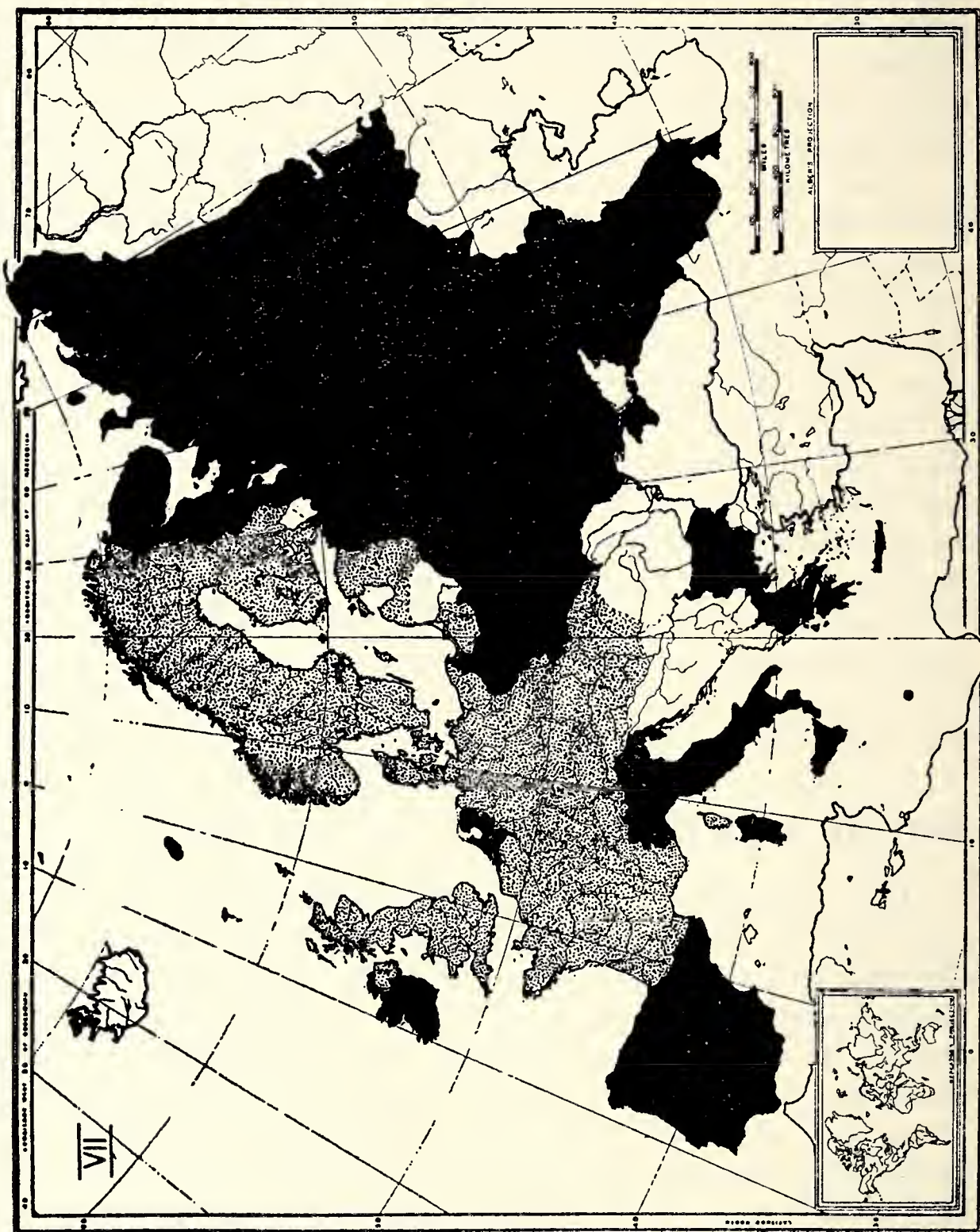
END OF WESTERN EUROPEAN EXPANSION

The expansion of western Europe, therefore, is a chapter of population history that is almost closed. If attention is confined to the more developed countries ²¹ during the last century, it becomes evident that the population has almost doubled; but the rate of increase is slackening off rapidly. In actual numbers these twelve countries grew from 109 millions in 1841-5 to 200 millions in 1938, an increase of 91 millions. In the same century the number of emigrants who left these countries for settlement overseas was in the neighborhood of thirty millions, about half of whom were from Great Britain. It was British, Irish, German and Scandinavian immigrants who pioneered the development of the United States.

²¹ Belgium, Denmark (including Faroe Islands and Iceland), Great Britain and northern Ireland (including islands in the British seas), Irish Free State, Finland, France, Germany, Holland, Luxemburg, Norway, Sweden and Switzerland.

NET REPRODUCTION RATES ABOVE AND BELOW UNITY IN EUROPE

Black = above Unity. Dotted = below Unity. White = no data available.



Not until the American cities began to grow and new manufacturing methods demanded abundant unskilled labor, did the great tide of immigration set in from central, southern and eastern Europe.²² In the British Dominions immigration from the homeland has always predominated and in recent years the Dominions have taken a larger percentage of the dwindling numbers of emigrants from Britain. After the war of 1914-18, however, elaborate and expensive schemes of imperial migration encountered the basic difficulty that the potential supply of immigrants was drying up as the rate of population increase slackened.

A similar slackening of increase was occurring in all the industrial countries of western and northern Europe. This was true of Germany as well as other western European countries. The recent increase in births in that country has been due in some measure to marriages and consequent first births being hastened by marriage loans. The massive reduction in unemployment has also contributed to a higher marriage-rate and therefore to a temporary increase in the birth-rate. Effective suppression of the practice of abortion by ruthless police methods must also be taken into consideration. The story that the increased birth-rate is due to renewed patriotism and faith in the glorious destiny of a reinvigorated Germany does not appear to have any more basis in fact than the legend that the Japanese birth-rate rose for patriotic reasons after the Meiji restoration.

The new countries in North America and the British Dominions which showed such phenomenal rates of population growth in the 19th century are still increasing in numbers because their populations are still heavily weighted in the reproductive age-groups. In all of them, however, net reproduction rates have fallen heavily and in most of them these rates are now below unity.

It is a critical situation, therefore, which the peoples of the western world are facing. After two centuries in which they have not only multiplied, but occupied and replenished the earth, they are facing the prospect of stabilization and actual decrease in their numbers. They control the greatest areas of cultivable lands and substantially the greatest share of minerals and power resources. They have accumulated great capital assets and have organized their manufacturing industries on a basis of high specialization. They

²² Cf. A. M. Carr-Saunders, *op. cit.*, p. 53. Italian immigration was relatively large and increased steadily to a peak in 1901-5.

can retain this commanding position only in a world of peaceful change and developing international trade. In such a world they might watch with equanimity the developing industrialism of other areas, contenting themselves with concentrating on the most specialized types of manufacturing production and on the provision of shipping, commercial, financial, and investment services as Britain did increasingly in the 20th century. In a world where the mechanism of international trade has broken down and international anarchy reigns, they cannot reap the fruits of their investments or benefit from specialized interchange. This situation is doubly critical since other peoples are treading the path of industrial development and population increase in their turn.

THE LAG IN CENTRAL AND EASTERN EUROPE

The Industrial and Commercial Revolutions which spread outward from Britain in the nineteenth century are so described not because they were sudden or complete; but because, as they spread from industry to industry and from country to country, their effects were revolutionary. Working habits and modes of living, as well as types of production, changed from hand to machine work, from craft to factory methods, from dispersed to centralized organization and from industrial to financial control. Even in the most advanced countries these changes took time.

Wherever the new processes have been introduced into countries with a long historical tradition and tenacious social relationships, their spread has been gradual and far from complete. This is particularly obvious if consideration is given to the countryside as well as the towns. The existence of modernized trading and government centers such as the capitals of most European states may be quite consistent with the survival of a traditional outlook and craft methods of hand labor in the surrounding countryside.

One factor that must always be stressed in the spread of industrialism is the importance of developed means of communication. Large scale specialized production depends upon facilities for cheap and rapid movement of heavy goods in bulk. Market organization is a function of highly organized facilities for the transmission of news. Such means of communication demand heavy capital investment which cannot be built up rapidly.

It is natural to find, therefore, that the spread of the Industrial Revolution eastward across the continent of Europe was relatively

slow. Even today modern roads, railways, and telegraphic systems consist of major trunk lines rather than the network which is spread over the more industrialized countries to the west and north. Agriculture retains its dominating importance over most of central and eastern Europe and its methods remain those of intensive hand labor. Industry, despite the stimulus of economic nationalism, is largely confined to a few urban areas and to a somewhat narrow range of products. Productivity and national incomes are relatively low.

POPULATION PRESSURE UPON THE LAND

These facts might be illustrated in many ways. There is evident a great, and growing pressure of numbers upon cultivable land in most countries of southern and eastern Europe. This pressure has been growing in intensity since the United States and other countries imposed progressively severe barriers to emigration, particularly from 1924 onwards. The re-settlement of refugees in certain areas—notably Bulgaria—after the last war further increased the pressure upon available land. It is not surprising to find, therefore, that the density of rural population per 100 acres of cultivated land rose in Bulgaria from 36 in 1910 to 45.7 in 1926 and 46.5 in 1934, while the percentage of holdings of less than 12.4 acres rose from 57 per cent in 1926 to 63.1 per cent in 1934. A Bulgarian farm of 12.4 acres consists normally of fifteen scattered strips of land. Bulgarian economists have estimated that from 7 to 10 per cent of human labor and from 10 to 20 per cent of animal labor power is wasted in traveling from strip to strip. Indeed it has been estimated that, because of such handicaps to efficiency, not more than 60 percent of the available agricultural labor can be effectively utilized.²³ Another estimate is that there is a surplus of agricultural labor in Bulgaria of perhaps 700,000 to 1,000,000 persons. Though only 250,000 are actually unemployed, at least double that number are under-employed even in normally prosperous times.²⁴ It is not surprising to find that the percentage of illiteracy is relatively high in such backward agricultural areas.²⁵

The most significant statistics, however, are those which show

²³ Cf. *Population Index* 7 (2), p. 88-89.

²⁴ League of Nations, European Conference on Rural Life, 1939, Doc. No. 1, p. 43.

²⁵ *Population Index*, *op. cit.*, p. 87.

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the percentage of the total population which is engaged in agriculture. For Europe as a whole the figure is 42.2 percent.²⁶ For Australia the total employed in agricultural, pastoral and dairying industries is 20.3 percent.²⁷ Mr. Colin Clark has estimated that "New Zealand can give her population their present generous diet with the employment of only 8.6 percent of her labor force. Exportation of foodstuffs employs another 14.2 percent of her population and the production of industrial materials (wool, hides, etc.) 0.3 percent for home consumption and 4.6 percent for export, making up 27.7 percent of the working population in all."²⁸

These figures may be compared with the percentages of agricultural workers to the total occupied population in central and eastern Europe as summarized in the following table:²⁹

<i>Country</i>	<i>Year</i>	<i>Occupied Population</i> <i>000's</i>		<i>Percentage</i> <i>Occupied in</i> <i>Agriculture</i>
		<i>Agricultural</i>	<i>Total</i>	
Bulgaria	1926	2,464	3,043	81.0
Estonia	1934			67.0
Greece	1928	1,476	2,746	53.8
Hungary	1930	2,031	3,830	53.0
Latvia	1930			66.2
Lithuania	1923			76.7
Poland	1921	10,270	13,523	75.9
Roumania	1930	8,244	10,543	78.2
Yugoslavia	1931	5,100	6,478	78.7

The percentages revealed in this table indicate that in economic development many of the eastern European countries approximate rather to the Asiatic type of agricultural concentration than to the western European type of urban concentration. The agricultural exporting countries of the New World do not occupy more than a small fraction of their total population on the land. The agricultural exporting countries of central and eastern Europe occupy up to 4 out of every 5 workers on the land. This is as high a figure as has been estimated for China. Land utilization is very high in these eastern European countries, the proportion of land

²⁶ League of Nations, European Conference on Rural Life, 1939, Doc. No. 1, p. 8.

²⁷ *Commonwealth Year Book*, Census of 1933.

²⁸ Colin Clark, *The Conditions of Economic Progress* (London, 1940), p. 252.

²⁹ League of Nations, European Conference on Rural Life, 1939, Doc. No. 1, p. 8.

devoted to agriculture as compared with pasture is also high, and the livestock population is relatively low. In all these respects the statistics show increasing population pressures in recent years, despite the effort made to relieve such pressures by stimulating industrial development in these areas.

UPWARD TREND OF POPULATION INCREASE

Central and Eastern Europe, therefore, remain in a relatively backward stage of economic development. Nevertheless the cycle of population increase characteristic of the western world in the nineteenth century is now well advanced in eastern Europe also. It began later than in the west and north; but it is following the same general pattern.

Statistical measurement of population trends in southern and eastern Europe is rendered difficult not only because national boundaries have been changed in the course of successive wars; but also because accurate census data is a very modern development over a large part of these areas. While the more recent data for most of the newly created states have been compiled with at least an approximation to modern scientific accuracy, the changes in boundaries make estimates of growth hazardous before about 1925.

In the table which follows all the European countries east of Switzerland are included, even though some of them, and some regions within them, display population trends more characteristic of western than of eastern Europe.

THE INCREASE OF POPULATION IN EASTERN EUROPE 1800-1930 ³⁰
(000,000's)

	1800	1900	1930	<i>Annual Increase per 1,000 1920-1930</i>
Estonia			1.1*	3.7
Latvia			1.9*	10.1
Lithuania			2.4*	11.8
Poland	3.0	10.0 ^a	31.7*	16.8
Austria	13.3	26.2 ^b	6.7*	3.8
Hungary	10.0	19.3 ^c	8.7*	8.5
Czechoslovakia		12.7	14.7*	8.1
Greece	1.0	2.5	6.4*	24.5
Turkey (in Europe).....	4.4	6.5	1.1*	
Bulgaria	2.2	3.7	5.9*	20.6
Yugoslavia	1.7 ^d	4.5 ^d	17.9*	14.9

See footnote on page 28.

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	1800	1900	1930	<i>Annual Increase per 1,000 1920-1930</i>
Roumania	2.6	6.6	18.1*	15.2
U. S. S. R.	36.0	99.7 ^e	127.5*	15.5

* New boundaries.

^a Old boundaries 1914, 12.7; new boundaries 1919, 26.5.

^b New boundaries 1900, 6.0.

^c Old boundaries 1914, 21.5; new boundaries 1914, 7.9.

^d Serbia, Montenegro, Bosnia and Herzegovina.

^e Old boundaries 1914, 124.2; new boundaries 1914, 118.8.

While there may be a considerable element of uncertainty in some of the statistical data upon which these calculations are based, particularly the data for European Russia and the Ukraine, there is no doubt as to the main trend. There is a marked lag in the population movements of eastern as compared with western Europe. Professor Kuczynski points out that "in western and northern Europe as a whole the net reproduction rate has dropped from 1.3 in the 1880's to 0.8 in 1933-6. In central and southern Europe as a whole it still is about 1.15."

It must be remembered also that in central, eastern and southern Europe (including European Russia) the decline in net reproduction rates is very recent. The population of this whole area, therefore, is heavily weighted in the younger age groups so that the absolute number of births is still high relatively to the total population and therefore the rate of natural increase is also high. Even though fertility has begun to decline and the decline is spreading more rapidly than it did when it first began in western Europe, it will take time before this is reflected very markedly in the actual slowing up of population increase. Even with the ravages of war, which are so severely decimating Poland, Yugoslavia and Greece, eastern Europe may not experience a prolonged, absolute decline in population. When this war began, the peoples of eastern Europe were at the stage in the cycle of increase through which western European peoples passed one, two or perhaps even three generations ago.

³⁰ Sources: For 1800 and 1900, Swedish Statistiska Centrabyran, *Aperçus statistiques internationaux*, Vol. XI, ed. by G. Sundbärg (Stockholm, 1908), p. 34-5 (some figures revised). For 1930 and rates of annual increase 1920-30, Statistical Year-Book of the League of Nations 1931-2 (Geneva, 1932), pp. 22-3 (some figures revised). Table adapted from *Encyclopedia of Social Sciences*, Vol. XII, p. 244.

IMPLICATIONS

It is important to notice that the facilities for emigration in the early decades of the nineteenth century drained off part of the first massive increases of population in these areas. The demand for cheap unskilled labor to develop the mass-production industries of the United States came at a time when the increase of western and northern Europe was beginning to slacken off, but when it was gaining fast in southern and eastern Europe. Migration not only drew off large numbers of younger men and women from these areas, but transferred their potential increase to the United States. The closing of immigration outlets in the early 20th century, moreover, was directed primarily against the mass movement of unskilled workers that had developed from southern and eastern Europe. The immigration quotas under the United States legislation of 1921-4 were shifted to an earlier period as the basis of calculation deliberately to reduce this type of immigration. In consequence there has been a banking-up of the population increase in central and eastern Europe.

It could be shown that the power resources and the mineral deposits, as well as the facilities for transport and the organized marketing systems which are the essential basis of industrial development are concentrated in the area where population increase is now tending to slow up and may soon turn to decline. Except for the U. S. S. R. the regions in which population has not yet reached its peak of increase are relatively deficient in coal, the main source of power, and in the basic minerals. They also lack developed systems of transport and marketing, as well as the productivity that might yield the capital resources necessary to construct them.

One of the great merits of the nineteenth century system of relatively free trade and cosmopolitan capitalist enterprise was that it provided a flexible framework within which such disparities of population pressures, capital equipment and available resources of raw materials might be corrected. Within Europe, for example, there was a considerable movement both of seasonal and of permanent migration from east to west. There was a flow of capital in the reverse direction and a mutually profitable interchange of manufactured and capital goods against foodstuffs and certain classes of raw materials, mainly agricultural. Unless means can be found to restore or replace these processes which brought land, labor and capital together by international trade, there must ensue a process

of mutual impoverishment and a cumulative pressure of population upon inadequate resources over a large part of eastern Europe.

NEW CYCLES OF ASIATIC INCREASE

The drama of Europe's populations pictured above, with its problems—at once moral and economic—of pressure and lack of resources, can be transferred to a greater stage. In the world at large, the East and the West in relation to each other, have played somewhat the same roles as western and eastern Europe. The problems involved in the slow awakening of Asia to western industrialism are the same in principle and application, except that the drama now being played out in the world theater is of a vastly more complex order. Let us turn to a consideration of this larger stage, and see what lies before us, now that the curtain of history has risen upon the drama of East and West. In so doing we may be able to attempt an answer to the question, "Does the welfare of the far-off swarming millions in the river valleys of Asia concern us in any way? And if it does, can anything be done about it?"

RUSSIA

Russia, even before 1917, formed a massive obstacle to the eastward spread of the Industrial Revolution. Despite the brief and inadequate period of modernization in the 1860's, little of the scientific spirit of western civilization had permeated the great mass of the Russian people. There was a slow eastward drift of population to Siberia; but little development of the vast mineral and power resources of the whole region. It is significant that the trading enterprise which opened not only India, but China and Japan, to western influences was sea-borne. It entered the old civilizations of the East through the treaty-ports so that Shanghai, Tientsin, Canton and Yokohama came to rank among the great shipping centers of the world.

The great strides made towards modernization since the U. S. S. R. emerged from the chaos of the first revolutionary period have not only shifted the Russian center of economic gravity eastward, but have also created a new and powerful set of influences upon the economic development of India, China and Japan. An alternative type of economic organization has been presented to great masses of people in the Asiatic countries who were becoming

restive under the trading and financial pressures of western capitalism.

From the viewpoint of economic power and leadership the nineteenth century map of the world was clearly centered upon the British Isles. The map of the twentieth century must be drawn from many centers. The growing power of the United States in world affairs is a new factor to be reckoned with. Britain still retains many threads of world-wide investment and commerce in her hands. Germany is making desperate efforts to dominate the continent of Europe. But the great bulk of Soviet Russia stretches unbroken across northern Europe and Asia. Its influence has been powerful since the early stages of the Chinese nationalist movement and has not been without influence in India while its shadow has lain like a portent of disaster over Japanese attempts to organize a new order on the continent of Asia.

This eastward pressure of the Soviet Union has been the more important since the processes of forced industrialization and the increase of urban population which has accompanied them, have been oriented towards the east rather than the west. The pre-revolutionary movements towards modernization entered Russia, as they did China, through the ports and traffic centers most readily accessible to western Europe. The Soviet plans of industrial development, on the contrary, have been deliberately built upon interior resources. Moscow has again become more important than Leningrad and the new centers of heavy industry have been located more in the eastern Ukraine and even east of the Urals than on the western fringes of the Union.

The U. S. S. R. covers a vast territory and includes a great mass of the most diverse populations. Its boundaries stretch from the Arctic to the Black Sea and from the Baltic to the Pacific. Within its territories are large cities and densely populated rural areas as well as the sparse tundras and wide stretches of desert. In the last quarter of a century the U. S. S. R. has gone through great calamities as well as the most profound economic and social revolutionary movements. Population trends cannot therefore be described accurately by reference to aggregate totals or even to percentages of increase for the area as a whole. It is not sufficient merely to record the fact that in 1914 the total population of this vast area was estimated at 139.3 millions while in 1939 it was estimated at 170.5 millions. This large increase has not been steady over the whole period. Nor has it been uniform over the whole area or among the different

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groupings of the population.

It should be noted that before this war the trend of increase has been interrupted by two periods of calamitous decline. The first of these periods followed the war of 1914-17 and the revolution of 1917 as well as the civil war, foreign invasions and epidemics that marked the post-war years. It is difficult to estimate the loss of life in these disturbed years, but the net result was that the total population in 1924 was less by 1.9 millions than it had been ten years earlier. This decline was mainly in the cities, the population of which was estimated to have fallen by 3.4 millions while rural population increased in these ten years by 1.5 millions.

The second period of declining population came in 1933 and 1934—the years of famine that followed the forced collectivization of farms. The loss of life in these years has been estimated at 8.7 millions, mostly in the rural areas. As a result of this calamity the total population fell by 6.4 millions.³¹ Apart from this famine period there seems to have been a continuation of the trend towards population increase in the rural areas mainly because the birth-rate, though falling, is still very high while mortality rates have fallen substantially. The natural increase of urban population has apparently been much less marked, and much less regular, despite the greater fall in the urban than in the rural death-rate. The reason for this has been a sharp decline in the urban birth-rate because of housing and other economic difficulties and also because of the facilities provided for divorce and abortion. Since 1936, however, when the official attitude on marriage and family arrangements was abruptly reversed, there has been a notable tendency for the urban as well as the rural population to increase.

Throughout the period of rapid industrialization from 1929 onwards there has been a steady migration of population from the country into the towns so that the proportion of urban dwellers, which was 17.7 percent in 1914 (and fell to 15.5 percent in 1924), had risen by 1939 to 32.8 percent. This development which is a result of rapid industrialization on the one hand and agricultural collectivization leading to a rural exodus on the other, is not the

³¹ "The Growth of Population in the U. S. S. R.," *Quarterly Bulletin of Soviet-Russian Economics*, Geneva, No. 4, April, 1940; also "Results of the Census of 1939 in U. S. S. R.," *ibid.*, No. 5, September, 1940. Cf. also S. P. Turin, "Some Observations on the Population of Soviet Russia at the census of January 17, 1939," *Journal of the Royal Statistical Society*, Vol. 104 (2), 1941, pp. 172-4, and "American Quarterly on the Soviet Union," Vol. III, No. 2-3, November, 1940.

least revolutionary of the changes wrought by the Soviet regime.³² What had been dominantly a conservative agricultural population is rapidly becoming an urbanized industrial proletariat.

The change is all the more remarkable because the industrial development, planned in large measure for strategic reasons, has accelerated the eastward movement of population. Between 1920 and 1939 the population of European Russia increased by 26 percent from 102.7 to 129.2 millions. In the same period the population of Asiatic Russia increased by 43 percent from 28.9 to 41.2 millions.³³ Even within European Russia there was a substantial movement of population from west to east. Between 1934 and 1938 it is estimated that between 2½ and 3 million persons migrated from European to Asiatic Russia. These figures are supported by the statistics which reveal the extent to which leading industries are shifting eastward. Thus the percentage of coal mined in Asiatic Russia rose from 7.9 percent of the total Russian production in 1913 to 27.6 percent in 1937.

In any consideration of the present situation and future development of population in Asia, therefore, account must be taken of the fact that new centers of industrial production are in process of creation not only in the eastern Ukraine, but also at Sverdlovsk (Ekaterinburg) east of the Urals, at Tashkent in central Turkestan and around Novosibirsk in the heart of Siberia. Such new centers of modern industry, patterned on a new type of economic and social organization, can hardly fail to exert a profound influence upon population movements elsewhere in Asia.

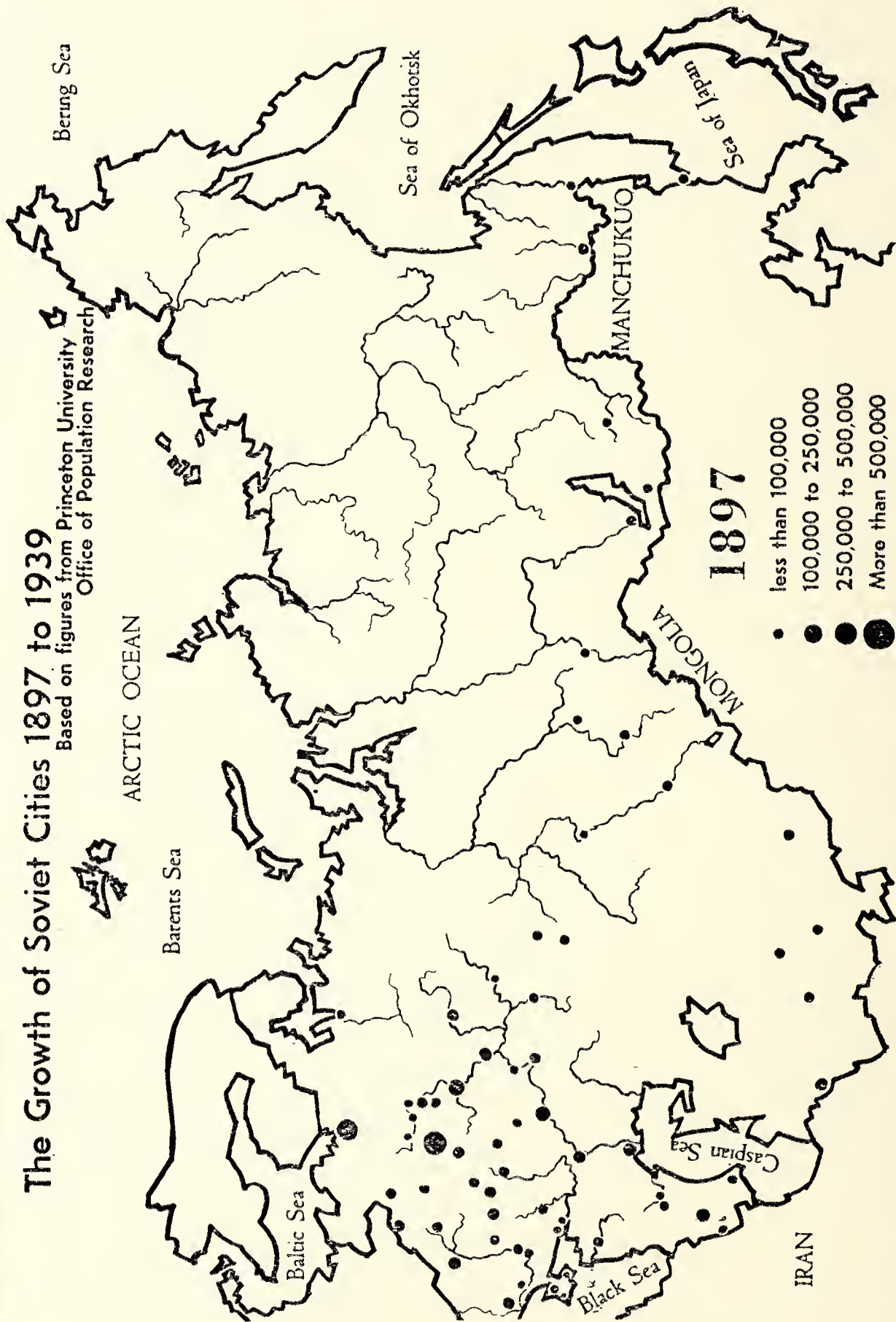
The great peasant masses of southern and eastern Asia, while not economically or politically very powerful, constitute such a great proportion of the world's population, that any change in their numbers must be significant. Here, in a comparatively small segment of the world's agricultural land, is massed approximately half the world's population. Exact numbers are not known, but China has perhaps 450 millions, India 370, the Japanese Empire 105, the Netherlands Indies 68, French Indo-China 24, Burma and the Philippines each 16, Thailand 15, Ceylon and Nepal each 6, and British Malaya 5 millions. Over the greater part of this region there ap-

³² Cf. *ibid.*, p. 102. The Percentage of urban population in 1897 was only 3.6; cf. Adna Ferrin Weber, *The Growth of Cities in the Nineteenth Century*, New York, 1899, p. 108.

³³ "Changes in the Location of Population and Industry in the U. S. S. R.," Quarterly Bulletin of Soviet Russian Economics No. 4, April, 1940, pp. 122-136.

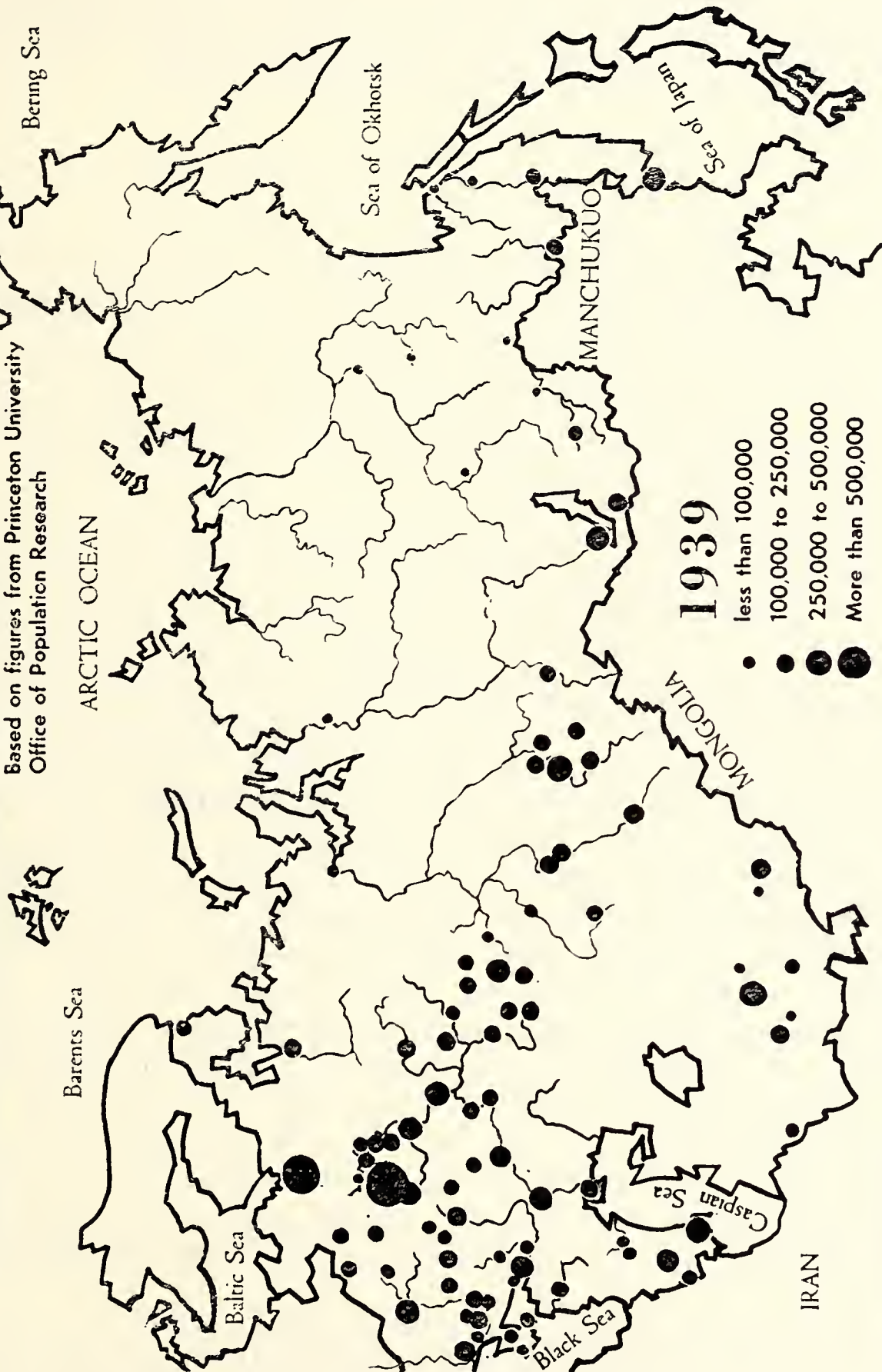
The Growth of Soviet Cities 1897 to 1939

Based on figures from Princeton University
Office of Population Research



The Growth of Soviet Cities 1897 to 1939

Based on figures from Princeton University
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peared until the sweep of war engulfed these areas to be a definite and strong tendency for numbers to increase. This tendency is clearly associated with the introduction of western scientific methods following upon the development of trading contacts with western Europe in the latter half of the nineteenth century.

JAPAN

The tendency to increase is perhaps clearest and most measurable in the case of Japan. The rate of increase in that country has often been exaggerated and still more often ascribed to wrong causes; but there is no doubt that it has been substantial. Nor is there any doubt as to the period in which it occurred—the period of modernization after Japan was brought effectively within the sphere of western economic influences.

Reliable statistics based upon effective registration of births and deaths, supplemented by accurate census data at five-year intervals, are not available before 1920. The broad facts of population movements before that date are reasonably clear, but the statistics are not reliable enough for detailed analysis, particularly in respect of birth and death rates. There was a long period during the latter part of the Tokugawa Shogunate in which regular estimates of population from 1721 to 1846 recorded little increase. It is probable that the estimate of around 30 millions at the end of this period and the first modern estimate in 1872 based on the local records of family registration somewhat understated the true totals.³⁴ There is good reason to believe that, as in other countries, the growth in Japanese population from the Meiji restoration (1868) onwards was due primarily to a decline in the death-rate as economic productivity increased and western methods of sanitation and medicine were introduced. As in other countries also, the fall in the death-rate has eventually been followed after an appreciable interval by a fall in the net reproduction rate. Increased survival in past generations, however, swelled the reproductive age groups so that the total number of births increased, at least until 1935; though the

³⁴ Cf., e.g., G. Frumkin, "Japan's Demographic Expansion in the Light of Statistical Analysis," *Sociological Review*, January, 1938, pp. 1-28; E. F. Penrose, *Population Theories and their Application with Special Reference to Japan*, Stanford, 1934, pp. 98-102, 108-15; Harold G. Moulton, *Japan: An Economic and Financial Appraisal*, Washington, 1931, Ch. XX.

net reproduction rate has been falling since 1920 if not before.³⁵

What is certain in regard to Japanese population is that throughout the period of modernization there has been a steady and cumulative trend of increase for the same reasons, and in about the same proportion, as in western European countries two generations earlier.

NETHERLANDS INDIES

It may be possible that Japan has reached a peak of population increase, with at least a possibility that the rate of increase may slacken from now onwards, but the same cannot be said for the other Oriental countries of dense and increasing population. Some parts of the Netherlands Indies have both dense and increasing population in even more striking measure than Japan.³⁶ Though, as elsewhere, early censuses seem to have underestimated the numbers living in these closely-settled islands, there is no doubt either of the regularity or the magnitude of the increase in the 19th and 20th centuries. Nor is there any doubt that the causes are to be found primarily in settled government, economic development, better sanitation, and improved medical practice.³⁷ Numbers did not increase in this way when the islands were ravaged by tribal wars, disease was pandemic and methods of cultivation were primitive. Among the Javanese, however, there has apparently been little sign as yet of any decline in the birth rate. Increasing population with relatively high birth and death rates has kept closely on the heels of expanding productivity, a fact which makes clear the dependence of the islanders upon the world market for their production of petrol, rubber, sugar, cinchona and other tropical products.

INDIA

The other great Asiatic area of dense population for which at least approximately accurate records are available is India. While

³⁵ Cf. Penrose, *op. cit.*, 103, and Chapter II, "Mortality, Reproduction and Rate of Increase of Population since 1920" in E. B. Schumpeter and others, *The Industrialization of Japan and Manchukuo, 1930-1940*, New York, 1940.

³⁶ Cf. the admirable summary analysis of population trends appended (in English) to Vol. VIII of the official report "Census of 1930 in the Netherlands Indies," Batavia, 1936.

³⁷ Cf. de Kat Angelino, *Colonial Policy*, The Hague, 1931 and the remarkable statement of public health policies in League of Nations: Intergovernmental Conference of Far Eastern Countries on Rural Hygiene—Preparatory Papers, *Report of the Netherlands Indies*, Geneva, 1937. For an up-to-date survey of government see A. Vandenbosch, *The Dutch East Indies*, Berkeley, 1941.

38 THE ECONOMIC PATTERN OF WORLD POPULATION

generalization is hazardous in regard to such a vast area differing so widely in physical features and climate as well as in the character of the diverse peoples among its inhabitants, there seems to be unanimous agreement among authorities that settled government, public works, improved communications, and better sanitation have led in recent decades to a massive, if irregular, increase in numbers. Indian economists and foreign experts are agreed that recent census returns, showing an irregular increase from decade to decade, "are compatible with, and may be said to suggest, pressure upon the means of subsistence." The main cause of variations in the rate of increase is clearly that the death-rate fluctuates more widely than the birth-rate. Since famines are now less prevalent, the chief reason for fluctuations in the death-rate is the variable incidence of epidemic disease, and this fact suggests strongly that, for large sections of the population at least, productivity is little above the necessities for existence. Any decline in productivity weakens resistance and swells the death-rate. As in every other Asiatic country except Japan there is little sign of any widespread movement towards lower birth rates such as might result from a higher age at marriage or from birth control. A large proportion of the population breeds up to the limits of subsistence and since those limits have been raised in some measure there has been a slow, irregular but substantial increase in numbers. It is reasonable to conclude, therefore, that "the future population of India will be governed by such expansion of opportunities for subsistence as may take place."³⁸

The opportunities for extending the cultivable land area are relatively slight in a land already cultivated intensively in farms that constantly diminish in size. The main avenue for raising living standards must, therefore, be industrial development. Such development as had begun in India suffered setbacks in the great depressions following the war of 1914-18; but industrialization has received new impetus in the present war. There can be no solution of India's population problems, however, if the added productivity of industrial development is swallowed up by further increases in numbers. Only if this increased production is intercepted for social purposes such as education and public works so that the natural increase of population is limited can living standards be raised.

CHINA

The case of India is paralleled in essentials by that of most other

³⁸ Carr-Saunders, *op. cit.*, p. 275.

areas in this Asiatic zone of dense population pressure. Reliable statistics are lacking even for present numbers and still more for rates of increase even in the recent past. The consensus of expert opinion, however, is that over the whole coastal and river-valley area from China to Malaya pressure of population upon limited resources is kept in check only by the harsh Malthusian checks of war, famine and pestilence. The lodgment of modern trading and productive methods in certain areas has tended to lift the limits to subsistence, so that population tends to grow, as D. K. Lieu has suggested for China "not at constant rates of increase, but at high rates alternating with low ones, or through increases alternating with decreases."³⁹

There has in recent years been a great deal of attention paid to population problems in China, but in default of adequate census data there must remain a considerable element of speculation in all the sample studies, estimates and analyses that have been published. One of the most thorough recent surveys of the whole problem is that published in 1935 by Dr. Nanming Liu, who has thoroughly canvassed the official and private sources of information that are available.⁴⁰ The 1928 census estimates the total population at 446 millions and of these Dr. Liu estimates that less than 7 percent live in towns of 100,000 inhabitants or more. The marriage rate is high and the average age at marriage is low (20.8 years for males and 18.1 years for females.) The crude birth rate is high, but the crude death rate is also high and the high rate of infant mortality is especially marked. There is good reason, therefore, for the conclusion that "China is at present passing through a crisis of overpopulation such as few countries have known and such as she has seldom experienced in her history. Famines, calamities, a too low level of living, unemployment, revolutionary troubles, all demonstrate that the crisis is extremely acute."⁴¹ If proof were needed of this population pressure attention might be drawn to the scale of emigration movements wherever and whenever access has been afforded to new lands as in the rush to Manchuria in 1928-32,⁴² or to

³⁹ D. K. Lieu, *The 1912 Census of China*, Madrid, 1931, p. 6.

⁴⁰ Nanming Liu, *Contribution à l'étude de la population chinoise*, Geneva, 1935.

⁴¹ *Ibid.*, p. 225.

⁴² Cf. J. B. Condliffe (ed.), *Problems of the Pacific, 1929*, Chicago, 1930, Ch. XI, by C. Walter Young, "Chinese Colonization and the Development of Manchuria."

new economic opportunity as in the migration to Malaya until industrial depression after 1929 closed such opportunities.⁴³

THE POPULATION OF DEPENDENT AREAS

The impact of European trade and settlement upon many backward peoples was harsh and destructive. Where, as in most of the temperate grasslands that attracted colonies of settlement, these native people were in a primitive stage of economic development, the advent of the white man caused rapid depopulation. New vices and new diseases were introduced to peoples that had not developed resistance and immunities, and more efficient methods of conducting tribal warfare were presented to them; but the most serious damage wrought by European traders was in the destruction of native social and economic organization. Nearly always there developed for a time an attempt to profit from the demands of the newcomers for food and raw materials. Quite often under missionary leadership the native peoples even attempted cultivation of the European type for this purpose. But these first attempts at adaptation were everywhere succeeded by discouragement, demoralization or by sullen resistance. In a great many colonial areas this discouragement led rather quickly to a decline in numbers.

It is impossible, however, to measure this depopulation with any accuracy or even to measure the subsequent period of stabilization and renewed increase in certain areas. Unfortunately, the statistics that are available leave much to be desired. There is only one way of finding out the population of a given area—by counting the number of people living in that area at a certain moment. The taking of a census, however, costs money and demands skillful organization. Few dependent or semi-dependent areas are well-equipped with either. The result in most cases is that populations are estimated, indirect methods are used, or samples are relied upon. For most dependent areas, therefore, the best estimates available are usually intelligent guesses. In course of time the origin of these guesses is often forgotten. By repetition and frequent citation they acquire credibility. New guesses are based upon or compared with them. Unless some official or expert has the temerity to make a new guess on different bases the original guess may in time acquire

⁴³ For statistics of Chinese migration and evidence of the return movement see Nanming Liu, *op. cit.*, Ch. VIII.

the sanction of antiquity and become irrefutable for lack of critical evidence.

Even when so-called censuses are taken, their inadequacy is often glaring. The larger part of Africa, therefore, is still dark as far as accurate information on population trends is concerned. Though particular cases of population increase are known,⁴⁴ the general situation is far from clear. "As for our present knowledge," writes Lord Hailey in his *African Survey*, "there are tribes of which we may safely predict that unless conditions improve they may die out; there are probably others that are progressing; but for the majority it is at present impossible to say with confidence whether they are reproducing themselves or not, and in no case is it possible to state accurately the balance of births and deaths."⁴⁵ The great need, as Dr. Kuczynski has well said, is not how to improve existing colonial statistics but "how to convince the colonial offices that what is needed in most colonies is an absolutely new departure."⁴⁶

There are, however, certain cases where population estimates are somewhat more informative than those in Africa. A dramatic case is presented by the West Indian islands whose native population was reinforced in the seventeenth and eighteenth centuries by shiploads of negro slaves imported to work on the cane sugar plantations. Though the available statistics leave much to be desired, the mixed population of the islands appears to have increased, and to be still increasing, rapidly so that heavy densities and high rates of estimated increase are recorded. The poverty and social problems that are the consequence of such a situation have recently provoked much attention.⁴⁷ With the increased protection of European and American beet sugar and the development of new cane sugar areas such as Hawaii, the Philippines, Java and Fiji, the economic production and trade for which the negroes were originally imported has declined; but the cycle of population increase goes on.

⁴⁴ Cf., e.g., the industrialized population of the copper belt studied in J. Merle Davis, *Modern Industry and the African*, London, 1933, and Kuczynski's statement about British Togoland in *The Cameroons and Togoland*, London, 1939, p. 548.

⁴⁵ Lord Hailey, *An African Survey*, London, 1938, Ch. IV, especially p. 125.

⁴⁶ R. R. Kuczynski, "Colonial Population," London, 1937, pp. xii-xiv.

⁴⁷ Densities per square kilometer have been estimated as high as 182 in Guadeloupe and Martinique and 194 in Puerto Rico—compared with 16.3 for the United States. Estimated rates of annual increase that seem relatively reliable range as high as 1.86 in Jamaica, and 2.06 in Puerto Rico, compared with 0.67 in the United States.

While statistical confirmation is lacking, there is some reason to believe that the West Indian case is typical of many others. The copper belt in the Belgian Congo and Northern Rhodesia may be cited. Labor has been attracted also to the gold mines of South and West Africa. In these areas as well as in the cocoa and palm-oil plantations on the west coast and the cotton-growing areas of Uganda and the Anglo-Egyptian Sudan there are variants of the same story of new prosperity and new ways of living appearing first to arrest the decline of population and then to start a new cycle of increase. The increase of numbers, once begun, tends to outrun the economic capacity of native agriculture and therefore becomes dependent upon a continuance of external investment and trade. If events in the outside world interrupt that trade, the native population may suffer heavily.

A somewhat different picture is presented by those areas, for example in the countries of the Near East, where the imperative search for petroleum has brought heavy specialized investment and new sources of revenue to formerly impoverished areas which once were the seats of high civilizations and still retain capacities of organization and leadership. A great part of the Near East from Palestine to Persia owes its impoverishment in the main to the abandonment of ancient methods of water conservation and control until fertile irrigated areas have dwindled to oases in the desert and great trading towns have been reduced to memories of their former greatness if not to ruins. The introduction of new capital and elastic sources of revenue may bring a revival of trade and some increase of production; but it is doubtful whether it can restore the agricultural fertility that "God alone could plan, and builds not twice." What it can do, and apparently has done, is lift the limits to population increase.

There are certain areas of Central and South America also where a predominantly backward industrial population, largely of native origin, has begun to increase rapidly because of the introduction of western capital and enterprise in search of oil or mineral ores; but the countries of South America which are most heavily populated have, until recently at least, owed their increase to vigorous infusions of western European immigration. There is, it is true, a background of mixed native population which is on the fringe of their progress and this element of the population now tends to increase disproportionately as immigration from Europe is cut off and reproduction rates decline among the dominant European settlers. The main

countries of South America are properly considered, however, not in this tertiary zone of industrial development, but among the highly developed and rich, but relatively under-populated peoples such as those of the United States and the British Dominions.

INDUSTRIAL PROGRESS AND URBANIZATION

The preceding sections of this study have given a rapid survey of population trends in various regions and in the world as a whole during the nineteenth and twentieth centuries. Despite the imperfect statistical material the broad facts seem to be reasonably clear. There are rather more than two thousand million people in the world at the present time. About half of them live in the congested agricultural regions of eastern and south-eastern Asia. But the wealth, power and, at least up till the present, the organizing initiative of the modern world have been in the hands of a group of western European peoples and their offshoots overseas, who are now divided into warring groups. Between them these dominant peoples muster perhaps a bare fourth of the total population of the world, but their economic influence has been enormously greater. The tremendous economic development of the last century or two has been primarily due to their enterprise.

Though new initiative has very recently developed in Japan and the U.S.S.R., and Germany has revolted from the oceanic trading organization of the western world in a gigantic effort to create a new pattern of world domination based on continental hegemony, the distribution of population and the organization of productive resources in our present world has been determined by the trading enterprise that in the nineteenth century was centered upon London. Not only the great wave of population increase in western Europe and its overflow into the New World, but the consequential trends of increase that were started in eastern Europe, in the dependent colonial and semi-colonial areas, and even among the already dense masses of Asiatic population, were correlated with the dynamic trading enterprise that spread outward from Britain in the nineteenth century.

The swarming impulse of the western European peoples was dying down and their population increase was tending to slow up before Germany made its first challenge to the accepted order. The slackening of increase has proceeded faster in the generation which has since elapsed. Even in the vigorous new countries of European

settlement overseas this tendency has been marked. There is superficial evidence, therefore, for the view that the dynamic forces that created our economic world have lost their vigor. It is natural to find this sweeping and somewhat simple view energetically advanced by those who seek to challenge the existing distribution of resources.

In order to understand the economic developments of the nineteenth and twentieth centuries it is necessary to draw attention to the aspect of population increase which most clearly differentiates those centuries from previous eras. This aspect is the growth, not so much of cities, as of urban ways of life. Great cities are not new. They have been characteristic of all preceding civilizations. Indeed the whole group of words derived from *polis*, *urbs*, and *civitas*—politeness, urbanity, civilization—and their contrast with such words as *pagan* and *heathen*, indicates that political and cultural values as well as economic achievement have for centuries been associated with the congregation of people in cities. There have always been critics who have protested against the value set upon the amenities of city life and such critics are not wanting now; but every period of high civilization has in fact centered upon great cities.

What is unique in the latest period of economic advance, however, is not that cities have grown larger and more numerous; but that considerable strides have been made towards Kingsley's dream of "a complete interpenetration of city and country, a complete fusion of their different modes of life and a combination of the advantages of both, such as no country in the world has ever seen."⁴⁸

No one would contend that the "dark, Satanic mills" which were the first products of the Industrial Revolution provided the amenities of either town or country, though it is easy in concentrating upon the slums and gin-shops of the new industrial towns to forget the hovels in which many rural laborers lived at the time. Nor would any one contend that Osaka compares in natural beauty with the autumn foliage around Lake Chuzenji, though for its crowded inhabitants it provides a less harassing existence than millions of rural workers have enjoyed in ancient or modern Japan. The evils and injustices of city life have become immeasurably more dangerous since modern machine methods have rendered possible greater agglomerations of humanity than simpler ages could ever cope with. But the same machine methods, brought under con-

⁴⁸ Charles Kingsley, cited by A. F. Weber, *The Growth of Cities*, New York, 1899, p. 475.

trol, can be used, and have in some measure already been used, to give, not a favored few, but an increasing proportion of the whole population the opportunity of enjoying the advantages and amenities of both town and country. This desirable development, significantly, has gone furthest in the overseas countries in which the industrial processes that originated in western Europe have found their fullest development.

THE GROWTH OF CITIES

Many writers have called attention to the rapid growth and multiplication of cities in the modern world. After the breakdown of the Roman civilization, Constantinople remained the largest city in Europe till about 1600 when it was overtaken by Paris. Vigorous city life had developed meantime in the towns of northern Italy and across the Alps in southern Germany. At the beginning of the 16th century there were perhaps 6 or 7 cities in Europe whose population exceeded 100,000. By the end of that century there were 13 or 14. The wars of the 17th century were devastating for the trading community and no new great cities passed the 100,000 mark, though Vienna and Madrid replaced Antwerp and Messina, and in a period of stagnant population the existing great cities grew by 40 percent. In the meantime trade began to pass from the Mediterranean to the Atlantic and by the end of the 17th century London had displaced Paris as the largest city in Europe. Growth continued in the 18th century, but even in 1800 there were only 22 European cities with over 100,000 inhabitants and between them they reckoned only 3 percent of the total population.

The great period of city growth came in the nineteenth and twentieth centuries. By 1900 there were in Europe, excluding Russia, 120 great cities and by 1930 the number had risen to 182. Moreover, until the continuous improvement of means of communication promoted the processes of suburban decentralization, the great cities increased as a general rule faster than the smaller urban centers, while the growth of the latter exceeded that of the villages and the countryside.

Comparable figures of city growth through the centuries are not available for Asia which in 1930 had 224 cities of a population greater than 100,000; but with few exceptions, notably the ports such as Bombay, Calcutta, Singapore, Hong Kong, and Shanghai that were largely created by and for European trading interests, and

the industrial towns of Japan, these Asiatic cities are not strictly comparable with those of the western world. In all ages towns have been created as centers of religion, defense, government and trade; but the characteristic of modern cities is the emphasis placed in their activities upon specialized production and trade. Many of the cities of China and India do not fulfill the definition of a modern great city as "a head office of every important enterprise in its country, a heart to the national body."⁴⁹ The process of urbanization, in other words, is not merely a matter of agglomeration. It is essentially a process of specialized cooperation between the city and its hinterland, a process in which the function of trading is exercised primarily by city-dwellers; but in which city methods find complementary acceptance in the countryside. Such a process, by which urbanism pervades a whole great area, demands a productive agriculture, a developed system of exchange and efficient methods of transport and communication.

There can be no effective development of urbanism when four people out of every five are needed to grow the necessary food supplies for the population. It is not surprising, on the contrary, that Australia, which produces not only abundant food supplies for its own people but a great export surplus, by employing one person in five on the land, should be the most urbanized country of the modern world, in the widest and best sense of that term.

The number and distribution of Europe's great cities in 1830, 1850 and 1930 is shown on the attached maps. While there are certain statistical difficulties in compiling such maps, notably those arising from the definition of city areas, there can be no doubt of the broad conclusions to be drawn from the data available. The number of cities of over 100,000 inhabitants increased more than tenfold in the fifty years between 1880 and 1930. With few exceptions every city which had 100,000 people in 1880 had grown to 1,000,000 or more in 1930. And the movement towards urbanization had not only spread outward from Europe but was most marked in the relatively thinly settled countries of European settlement overseas.⁵⁰

The phenomenon of urbanization is still imperfectly understood. The rapidity and the recency of its modern development needs

⁴⁹ Cf. Mark Jefferson, "Distribution of the World's City Folks: A Study in Comparative Civilization," *Geographical Review* 1931, pp. 446-465.

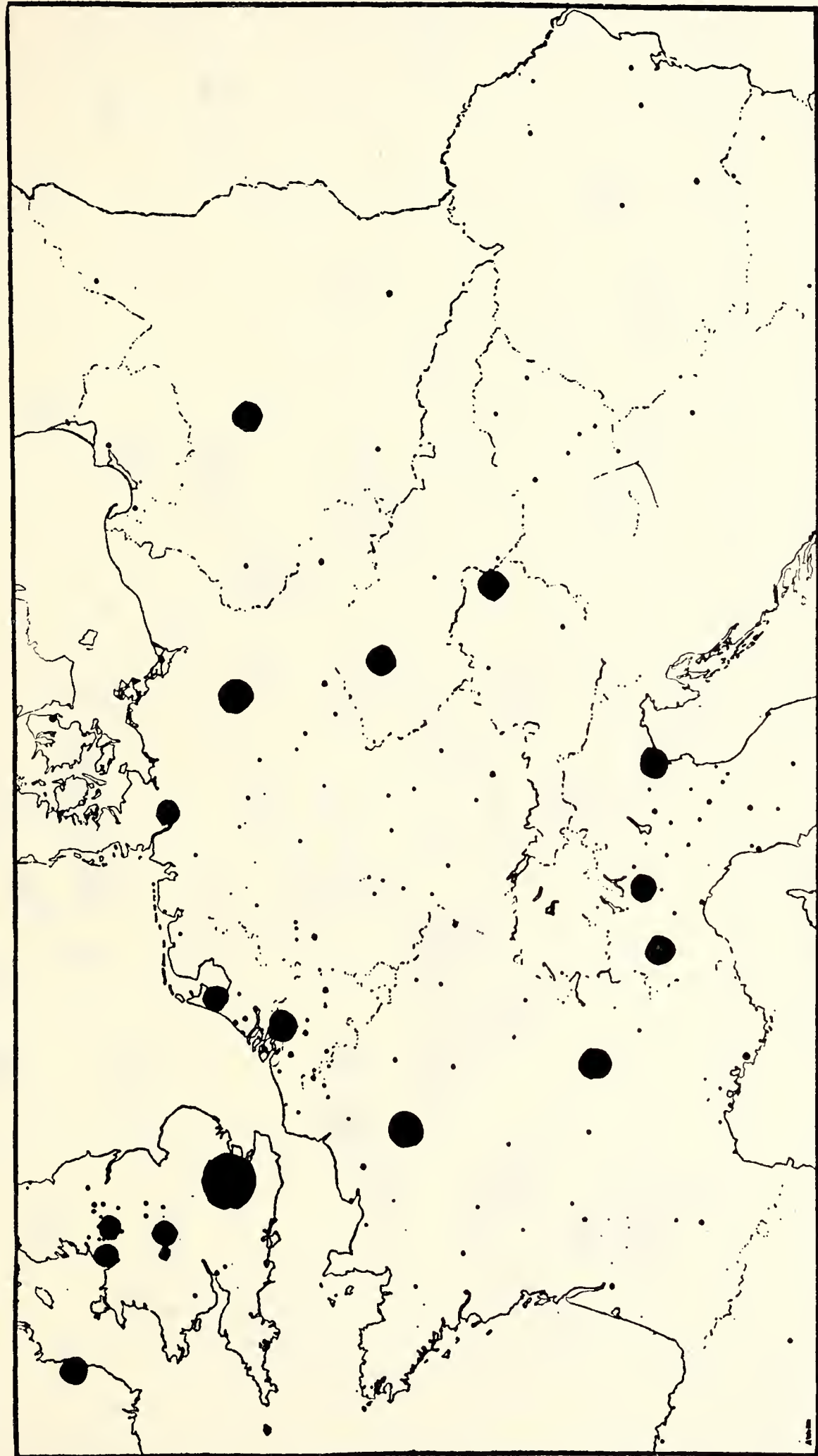
⁵⁰ By continental areas the statistics are as follows:

(Continued on page 49)

THE GROWTH OF EUROPEAN CITIES 1830 TO 1930

Source: Welte, Adolf "Die Verstädterung Mittel-und West-europas von 1830-1930" in Zeitschrift für Geopolitik XIII
Jahrgang (1936) Heft 4 (April)

1830

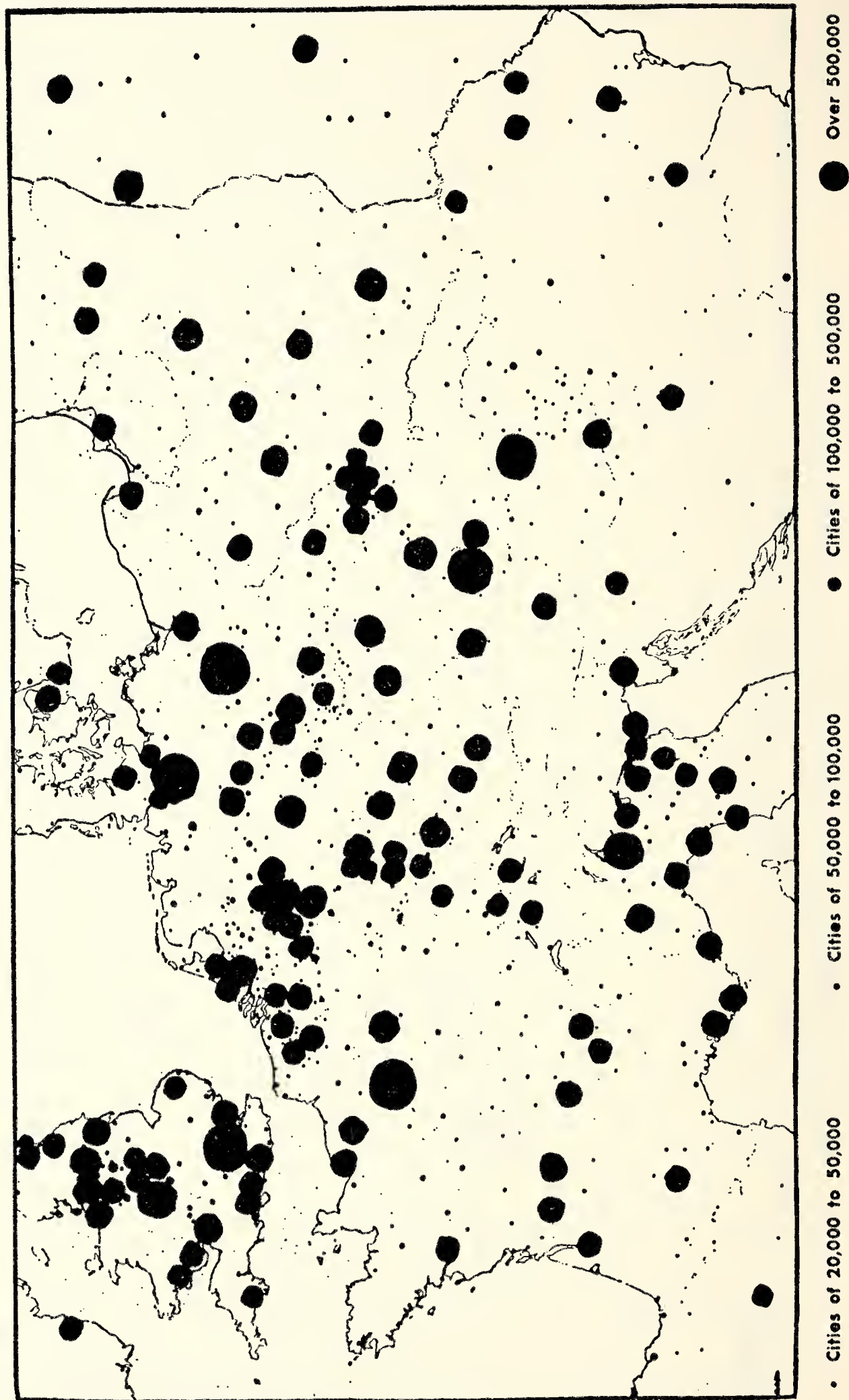


- Cities of 20,000 to 50,000
- Cities of 50,000 to 100,000
- Cities of 100,000 to 500,000
- Over 500,000

THE GROWTH OF EUROPEAN CITIES 1830 TO 1930

Source: Welte, Adolf "Die Verstädterung Mittel-und West-europas von 1830-1930" in Zeitschrift für Geopolitik XIII
 Jahrgang (1936) Heft 4 (April)

1930



emphasis. In 1801 there were only 21 “great cities” in Europe. In 1930 there were 182 in that continent and 355 outside it. In 1800 there were only six cities in the United States whose population exceeded 8,000 and Philadelphia, the largest of them, had only 69,000 inhabitants. The United States therefore had no “great cities” in 1800; New York reached the 100,000 mark in 1804 and remained alone in that category till 1839. In the next decade Baltimore, Boston and New Orleans—all seaports—passed the mark and in the following twenty years a number of river-ports—Cincinnati, St. Louis, Pittsburgh, Louisville—and lake-ports—Chicago, Buffalo, Cleveland, Detroit, Milwaukee—also grew to this size. Since the seventies all the great cities that have appeared in the United States, except Washington, have been railway centers.

The rapidity with which the new countries surpassed Europe in the development of urban centers demands emphasis. As Weber points out this is “both natural and necessary;” but it is a remarkable fact that “the development of the cities in a new country should outstrip that of the rural districts they serve.”⁵¹ It is even more remarkable that the new countries should have proved such apt pupils of western Europe as to surpass even the “comurbations” of older industrial areas such as Britain and Germany in the extent of

(Continued from page 46)

URBANIZATION BY CONTINENTS ‡

Continent	Number of Great Cities	Urban Population 000,000's	Total Population 000,000's	Percentage of Urban Population
Australasia	9	3.4	7.6	44.1
North America	90	38.1	156.8	24.0
Europe *	182	67.2	348.9	19.3
European America	90	39.4	139.2	28.3
Indian America	20	6.2	85.2	7.2
South America	20	7.4	67.0	10.9
Asia *	224	62.6	1,180.0	5.3
Africa	12	3.4	132.0	2.5
European Africa	12	3.4	34.8	9.8
Negro Africa	...		97.2	...
WORLD	537	182.0	1,892.6	9.6

‡ Mark Jefferson, “Distribution of the World’s City Folks: A Study in Comparative Civilization,” *Geographical Review*, 1931, pp. 446-465.

* Excluding Russia and Turkey.

⁵¹ Weber, *op. cit.*, p. 20.

their urbanization. Weber, writing as of 1891, listed the countries of the world in order of urbanization. Even then Australia and New Zealand ranked third, behind England and Wales, and Scotland.⁵² Then followed a group of older countries in Europe and Asia, before the Argentine (12th), the United States (13th) and Canada (21st). Less than forty years later Jefferson made a similar tabulation which showed decisively how much faster urbanization had proceeded in the new countries. Australia was first, the United Kingdom second, New Zealand third, Austria fourth, the United States fifth, and the Argentine, Uruguay and Canada eighth, ninth and tenth, close on the heels of Holland (sixth) and Germany (seventh).⁵³ Chile (twelfth) was ahead of Belgium (thirteenth).

It is for good reasons, therefore, that the new countries have been presented here as a separate zone of population development. What, for convenience, may be called the American type is the most developed and most productive economic organization the world has yet seen. It extends over most of North America and parts of South America as well as the British self-governing Dominions. Because it is so highly organized, in rural as well as urban areas, with abundant and efficient means of communication, a high degree of mechanization, and practically universal use of credit, this zone of population has great productivity affording the highest material standards of living in the world.

The countries of western Europe which rank highest in the scale of urbanization are those which have had the closest connections with this new world. This is particularly true of Great Britain which created the trading system of the 19th century and in the process became dependent upon it. Omitting Austria and Latvia whose great cities now serve circumscribed areas, the order of urbanization among the European countries runs: United Kingdom, Holland, Germany, Denmark, Belgium, France, Switzerland, Italy, Portugal, Sweden, Norway.

It has already been pointed out that urbanization has in the last decade made unprecedented strides in the U.S.S.R. also. While the statistics are not strictly comparable, the proportion of urban dwellers in the U.S.S.R. now ranks with that attained by the United States in the new world or Germany in western Europe.

⁵² *Ibid*, p. 144.

⁵³ Jefferson, *op. cit.*, Austria was rated fourth because Vienna formed so large a proportion of the shrunken territory remaining to Austria after 1918.

THE STRENGTH OF CITIES

It remains to consider whether this strong tendency towards urbanization should be regarded as a sign of economic vigor or as a symptom of decay. Writing at the end of the 19th century, Weber had no doubts. For him "the alertness with which the progressive Australian democracy has adjusted itself to the requirements of the modern industrial organization with its international and local division of labor" was sufficient evidence that Australia was "the representative of the new order of things towards which the modern world is advancing."

A more somber view is presented by those writers who in recent times have been impressed by the so-called "decline of the west," and particularly by the suicidal civil wars of the last generation in Europe. The ranks of these critics are reinforced by many who are alarmed by the prospect of population decline in the more advanced industrial countries and depressed by the artificiality and drabness of city life.⁵⁴ The former emphasize the belief that "a declining society is apt to hasten the day of its dissolution by squandering its diminishing store of vital energy in material performances on an excessive scale, not so much out of wanton megalomania as in a vain effort to give the lie to its own unacknowledged but agonizing consciousness of incompetence and failure and doom."⁵⁵ The latter are equally emphatic in their rejection of "the pattern of passive satisfaction and conspicuous expenditure encouraged by an increasing multiplicity of useless commodities and new distractions."⁵⁶

There are clearly two strands to this growing body of criticism of recent economic tendencies. The first is a moral condemnation of what are regarded as the false economic standards which are

⁵⁴ Cf., e.g., Lancelot Hogben, "Planning for Human Survival" in G. D. H. Cole and others, *What Is Ahead of Us?* London, 1937.

⁵⁵ A. J. Toynbee, *A Study of History*, Vol. III, p. 154. Cf. also the preceding passage (p. 150): "Militarism breaks a civilization down by causing the local states into which the society is articulated to collide with one another in internecine conflicts. In this suicidal process, the entire social fabric becomes fuel to feed the devouring flame in the brazen bosom of Molech. The single art of war makes progress at the expense of all the arts of peace; and, before this deadly ritual has completed the destruction of its votaries, they may have become so expert in the use of their implements of slaughter that, if they happen for a moment to pause in their orgy of mutual destruction and to turn their weapons for a season against the breasts of strangers, they are apt to carry all before them."

⁵⁶ Hogben, *op. cit.*, p. 184.

most manifest in urban life—ostentatious expenditure and pecuniary emulation in Veblen's terms. The second is a protest against the conditions of urban existence as destructive of healthier economic standards and purposes. The growing discontent and protest on both these grounds by protagonists of human, as distinct from so-called economic, values sometimes leads to romanticism particularly in regard to rural life and pursuits, and is even more often enlisted by the organizers of militarist despotism in their totalitarian attack upon the "effete pluto-democracies." It represents, however, a real and substantial condemnation, particularly of the overgrown "super-cities," that cannot be waved aside.

The great cities of our day have grown primarily because in the last century and a half means have been found to control the death-rate among crowded masses of people. Until the nineteenth century, cities maintained and increased the number of their inhabitants by drawing heavily upon fresh infusions of healthy adult immigrants from the surrounding countryside. The drift from rural to urban areas has continued; but "the manner in which the modern growth of cities has taken place is rather a larger natural increase in the city populations themselves (lower death-rate) than an increase in immigration from the rural districts; the current of migration cityward has been observed for several centuries, but it is only in the 19th century that any very considerable number of cities have had a regular surplus of births over deaths."⁵⁷

This fact in itself is enough to cause one to suspect the validity of the arguments against urbanization in the broader sense of the term. Indeed the attack on city life which is most pertinent to modern conditions is itself conceived in terms of modernization.⁵⁸ Not only the improvements in public health and medical care; but modern advances in popular as well as specialized education, in political democracy, trade union organization, improved housing and nutrition and care for individual misfortune had their origins

⁵⁷ Weber, *op. cit.*, p. 283. The differential between the rural and urban birth-rates, however, remains substantial.

⁵⁸ Cf. Hogben, *op. cit.*, pp. 188-9: "We are now on the threshold of an age of hydro-electric power, of electrolytic chemical processes, of light metals which exist in abundance everywhere. Cellulose is beginning to displace coal as a source of synthetic operations. Fertilizers, tank-culture, and applied genetics have made land the least important part of capital equipment in food production. Civil aviation, the light car, television, and broadcasting provide an escape from the disadvantages of cultural isolation contingent on small community life. Urban congestion is unnecessary."

not in country but in city life. The constructive discontent that provides the motive power for social reform or revolution is not usually generated in rural surroundings and no small part of the distrust of city life arises in fact from fear of such constructive discontent. It is significant that the countries which have gone furthest along the road to economic justice and political equality, those in which individual human rights are most adequately safeguarded and opportunities for individual development are most widespread, are precisely those in which urbanization has gone furthest. This does not mean that congestion in urban areas is not an evil; but it does mean that the advantages of city life are real and capable now of extension over wider areas. Not less, but more mechanization is the line along which to seek solutions. In this sense the American type of organization is indeed the representative of the new order.

To this conclusion many European writers object strongly on the ground mainly that what they regard as the "colonial ethos" is imitative rather than creative, an offshoot of European civilization rather than an independent force, and in any case extremely superficial and materialist in its outlook, excelling only in mechanical technique. It is difficult to resist the impression that in taking such a view they fall unconscious victims to what Toynbee has called "the nemesis of creativity . . . the hypnotization of a living self by a dead self."⁵⁹ It is true that the western countries overseas derive their civilization from Europe and largely from Britain, as Britain derived its civilization largely from Greece and Rome. No one can yet tell whether, in face of the challenge presented by the apparent disintegration of the parent civilization, they will prove capable of effective response; but at least they have shown increasing independence of thought and action precisely in the field of social organization which Professor Toynbee has chosen to illustrate the evils from which industrial societies are suffering.⁶⁰ The "malignant growth of a parasitic urban proletariat: an evil which seems to be

⁵⁹ Toynbee, *op. cit.*, Vol. IV, p. 245.

⁶⁰ Cf. Vol. III, p. 241, "Our Western scientific knowledge of which we boast, and even our Western technique for turning this knowledge to practical account—a technique on which we depend for the maintenance of our wealth and strength—is perilously esoteric. The great new social forces of Democracy and Industrialism, which our Western Civilization has thrown up in the course of its growth, have been evoked from the depths by a tiny creative minority. . . . And the main reason why this would-be Western Salt of the Earth is in fear, today, of losing its savour is because the great mass of the Western body social has remained unsalted."

sapping the strength of our own society in our time as it once sapped the strength of the Roman body social in its latter days" is an evil not to be denied; but there would seem to be more chance of coping successfully with it in countries with democratic education, high regional and occupational mobility, and great productive power.

While the new countries, and the United States in particular, have grave sectional problems, and are increasingly conscious of them, it is not they who are most likely to "turn our new power to our own destruction by putting its unprecedentedly powerful drive into a number of ancient anti-social institutions—into war and tribalism and slavery and property—at the risk of turning these once not wholly lethal vehicles of activity into veritable juggernaut cars."⁶¹

There is nothing inherent in the machine process which forces the hand of mankind into either good actions or bad actions. Machinery can be considered rather a further reach of man's powers, neither good nor evil in itself.

The countries of the new world, at least in their own societies, have blazed the trail which leads to a greater measure of individual freedom of opportunity and to collective responsibility for individual welfare. It is along this line that the rest of mankind will have to develop if it is to save itself from its own confusions, now grown to the point where only wars or new collaborative solutions can seem to solve them.

It is true that in many spheres of creative endeavor the new countries of the western world, though in many respects they are the prototypes of the future, have not yet produced artists recognized as great. But great art is not built in a day and the foundations of a society have to be well and truly laid in order that it may become the dwelling house of a new spirit. The new countries have at least begun to lay the foundations of societies in which not a chosen few but a great body of the population will have opportunities for creative work. By their example and their influence it is possible that they may help other peoples along the same road.

⁶¹ Toynebee, Vol. III, p. 212.

